Making Transit King: An Analysis of The King Street Transit Pilot

Brandon Stevens

A Major Paper submitted to the Faculty of Environmental Studies in partial fulfillment of the requirements for the degree of Master in Environmental Studies

Supervisor: Dr. Roger Keil

York University

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Table of Contents

Abstract

This paper discusses the findings of quantitative and qualitative research on the initial impact of a controversial transit pilot project which involved the redesign of a 2.6 kilometre stretch of King Street in downtown Toronto. The project strictly regulated use of the area by private cars and involved a number of design initiatives to enhance the public realm for non-automobile users.

Impacts on four stakeholder groups—transit riders, drivers, pedestrians, and business owners—were analyzed using quantitative data from the City of Toronto, and qualitative data obtained through more than 40 interviews with various stakeholders and professionals in Toronto's urban planning community.

This research finds that the initial impact of the King Street Transit Pilot has had a positive impact on transit riders and pedestrians. In terms of the impact on drivers and local businesses, the quantitative data shows that trends in average car travel times and consumer spending have remained consistent with trends established prior to the pilot being implemented. However, the qualitative data obtained from the interviews is less conclusive and revealed that some businesses are reporting a decline in revenue during the pilot phase. Due to a variety of external factors identified in this paper, further research is required to determine if there is a correlation between a decline in revenue reported by some businesses and the pilot project. What the data clearly shows is that overall, the King Street Transit Pilot has had a positive impact on transit riders and pedestrians, and an insignificant impact on drivers and local businesses. In sum, this research contributes to the well-established body of academic literature that addresses the complex mobility and congestion issues currently facing cities around the world.

Foreword

This major paper has been submitted to the Faculty of Environmental Studies at York University in order to fulfill the requirements for the Master in Environmental Studies (MES) Planning program. This major paper responds directly to four learning objectives in my Plan of Study, which are outlined below.

Learning objective 1.1 stated that I will acquire an understanding of the recent history of land use planning in Toronto. I have addressed this objective directly in this paper in two ways. The first way I have addressed this learning objective is by reviewing literature on the history of planning in Toronto (ex. Boudreau, Keil and Young, 2009), which is discussed in Section 3 of the paper. The second way I addressed this learning objective was through interviews with the former Chief Planner of the City of Toronto, Jennifer Keesmaat, and a manager in the City of Toronto's City Planning division. Both shared their strong knowledge and unique perspective of the recent history of planning in Toronto which has strengthen both this paper and my understanding of this part of Toronto's history.

Learning objective 1.2 stated that I will gain a thorough understanding of the land use policy which impacts the Greater Toronto and Hamilton Area. In this paper I have addressed this objective directly in three different ways. First, I reviewed the current versions of Toronto's *Official Plan* as well as the *Growth Plan for the Greater Golden Horseshoe*. Second, I reviewed literature which discussed land use policy in Toronto and the impact it has had on the way Toronto has grown. Finally, the interviews I conducted with the aforementioned current and

former high-ranking planning staff from the City of Toronto, which are documented in Section 3 of this paper, have also contributed to my understanding of the relevant land use policy.

Learning objective 2.3 stated that I will gain a thorough understanding of the unintended consequences resulting from projects which improve or implement rapid transit. In this paper I have directly addressed this learning objective, specifically in Section 4.2 (Impact on Drivers) and Section 4.4 (Impact on Local Businesses). In these sections of the paper I discussed findings from my research which revealed that there were unintended impacts on these stakeholders. For drivers, the unintended impact was confusion related to the new driving restrictions. In terms of business owners, an unintended consequence of this pilot project was that some businesses reported a decline in sales after the pilot project was implemented. Neither of these were intended to happen but they should serve as a reminder of the importance of being mindful of all potential impacts of policy decisions, intended or not.

Learning objective 2.4 stated that I will learn how the public (including local businesses) can be better prepared to embrace and take advantage of improvements to the transportation network. I addressed this objective directly in Section 4 (Findings) and Section 5 (Discussion of Findings) of this paper when I discussed the findings from the interviews I conducted. Two changes that could be made to assist with this were identified in the interviews: better communication between the City of Toronto and individual businesses and the timing of the implementation of the pilot project.

Acknowledgements

I would like to sincerely thank each and every person who assisted me with this paper. Whether it was the one of the many people who agreed to participate in an interview for this research, who assisted in the editing of the paper, or who was there to support me, I couldn't have done this without you, and I want you to know that I am extremely grateful for your support. While I can't acknowledge every person individually, I would like to give special recognition to the following people. I would like to thank both Al Rezoski and Jennifer Keesmaat who offered unique and very valuable insight into factors which contributed to the congestion issues along King Street and thus the problem this pilot project has been designed to address. I would also like to thank Steve Munro for his valuable insights into understanding the impacts of this pilot project and for granting permission to include part of his research into this paper. Finally, I would like to extend a heartfelt thank you to all the people that have assisted greatly with editing this paper. That includes my family and friends, my girlfriend Stephanie Keen, and my research supervisor and advisor, Roger Keil. I couldn't have done this without the assistance of all these people and I am extremely grateful for everyone who took time to assist me with this research paper.

List of Figures

List of Tables

Section 1: Background

Section 1.1: Introduction

The purpose of this major paper was to gain a thorough understanding of the impacts of an innovative pilot project designed by the City of Toronto to address significant mobility issues along King Street, a major street in the heart of downtown Toronto. Recent studies have found that Toronto is home to some of the worst congestion in Canada. (Julliard, 2018; Gill, 2017) A major study released in 2018 examined over 200 cities in 38 countries and ranked Toronto 20th in the world for congestion (Inrix, 2018). It is important to note that before this project was implemented, congestion along King Street was particularly bad, even for Toronto. Research by the City of Toronto (2017c) identified that prior to the implementation of the pilot project, during the morning and evening rush hour periods, it was faster to walk than to take transit along the portion of King Street where the pilot was implemented. As a result, a primary objective of this pilot project was to address the significant congestion and gridlock which had developed along the corridor. Even before the significant increase in ridership that occurred after the pilot was implemented, King Street was as the busiest surface transit route in the city with an average weekday ridership of 65,000 people (City of Toronto, 2019). The King streetcar was also ranked as the third busiest transit route in the city, falling just behind the Yonge-University (north-south) and Bloor-Danforth (east-west) subway lines (City of Toronto, 2019). In part, this is a result of the significant intensification in and around the King Street area. Although the City of Toronto also aimed to improve place-making and support economic prosperity with the pilot, the city has been clear that the primary objective of the project was to move people more efficiently (City of Toronto, 2019).

This pilot project, officially titled the King Street Transit Pilot, although more commonly referred to as the "King Street pilot project", has challenged conventional North American transportation planning policy. The pilot made changes to the street that prioritized sustainable modes of transportation over the automobile and thus was bound to create controversy. Numerous changes were made through the pilot project, which are detailed in the following subsection. However, I wish to highlight two major changes. Firstly, the pilot removed on-street parking spaces along the designated 2.6 kilometre stretch to make room for enhancements to the public realm. Secondly, the pilot implemented driving restrictions in order to reduce the number of cars and to allow for faster and more reliable transit service. While initially controversial, a thorough analysis of qualitative data - collected through numerous interviews with a broad spectrum of impacted stakeholders - and quantitative data - collected by the City of Toronto and the local transit agency, the Toronto Transit Commission - has revealed that after the pilot project was implemented, there have been various benefits, only one of which is reducing congestion on this stretch of King Street.

The design of the King Street Transit Pilot was shaped in part by public consultation done through the King Street Visioning Study. Based on the results of this study and advice from City staff, on July 4th, 2017, Toronto City Council approved the King Street Transit Pilot (City of Toronto, 2017b). Marshall (2017) discussed how the City of Toronto had tried to implement similar initiatives over previous decades but did not succeed. However, in this case, the initiative was approved by Toronto City Council and approximately four months later, on November 12th, 2017, the King Street Transit Pilot was implemented (City of Toronto, 2019). The pilot project transformed King Street between Bathurst Street and Jarvis Street into a street that prioritized

transit and pedestrians. Prior to the implementation of the project, the most pressing concerns along King Street regarding transit was the reliability, speed and capacity of streetcars. These three issues were central to the changes made through the pilot project.

One and a half years after implementation, on April 16, 2019, Toronto City Council voted on whether to make the changes made during the pilot project permanent. At the advice of City of Toronto staff, based on a clear indication from the available data that the pilot project had achieved the objectives set-out by the City of Toronto, Toronto City Council voted to make the changes permanent and formed the King Street Transit Corridor (City of Toronto, 2019).

The main objective of this research paper is to add to the findings released by the City of Toronto and to comprehensively assess the initial impact that the pilot project had on four stakeholder groups – transit riders, pedestrians, drivers, and business owners. Based on the literature review, I hypothesize that the measures proposed by the King Street Transit Pilot will have a net positive impact for the stakeholder groups outlined above. It is anticipated that these changes will result in:

- a positive impact for transit riders, specifically improved speed and reliability,
- a positive impact on pedestrians, specifically a belief that the public realm has improved,
- a positive impact on local businesses, specifically increased consumer spending and,
- an insignificant impact on drivers, specifically in terms of changes in travel times

While this project focused on a 2.6 kilometre stretch of King Street, the positive results can act as an example for future innovative projects aimed at addressing similar concerns. This research is significant because it shows that progressive change can be made quickly and at a low cost. We do not need to build expensive, state-of-the-art transit but rather can adapt existing infrastructure and prioritize sustainable modes of transportation in order to reduce congestion. Showing that a project with a relatively small budget can have a positive impact on transit service is of particular importance in the current neoliberal era where there is constant pressure for governments to cut spending. The positive impact of an innovative project like this could pave the way for future transit prioritization projects across the City of Toronto. In other parts of Toronto, such as in the suburban neighbourhood of Scarborough which is underserved by transit, an additional benefit would be improved transit equity. Introducing a pilot project designed to prioritize transit in an area of the city where a high proportion of the residents are transit captive could lead to increased reliability and frequency of transit for the thousands of people who rely on transit everyday outside of the downtown core. These modifications to the street could result in an improved quality of life by increasing the access to the things and people - jobs, social services, friends and family – that are essential for their wellbeing.

Section 1.2: Summary of Changes Made Through the King Street Transit Pilot

This subsection provides an overview of the changes that were introduced as part of the King Street Transit Pilot. These changes had an impact on numerous stakeholder groups and the way they use the stretch of King Street between Bathurst Street and Jarvis Street. To organize these changes, for this summary they have been grouped into whether they impact one of four stakeholder groups – transit riders; drivers; pedestrians and cyclists; and business owners. While

a particular change often impacts multiple stakeholder groups – for example driving restrictions impact all four stakeholder groups in various ways – to avoid repetition, the changes have been categorized based on the stakeholder group that is most directly impacted by that change. In this subsection the changes that have been made through the pilot project are simply described. An in-depth analysis of these changes and the impact they have had on the various stakeholder groups is the focus of the discussion of findings section of the paper (see Section 5).

Changes impacting drivers. The King Street Transit Pilot introduced various changes which impact the way the King Street Transit Pilot corridor is used. Most notable are the driving restrictions which prohibit through movement and/or left turns at various intersections throughout the pilot area. The map in Figure 1.2.1 displays the various driving restrictions implemented through the King Street Transit Pilot.

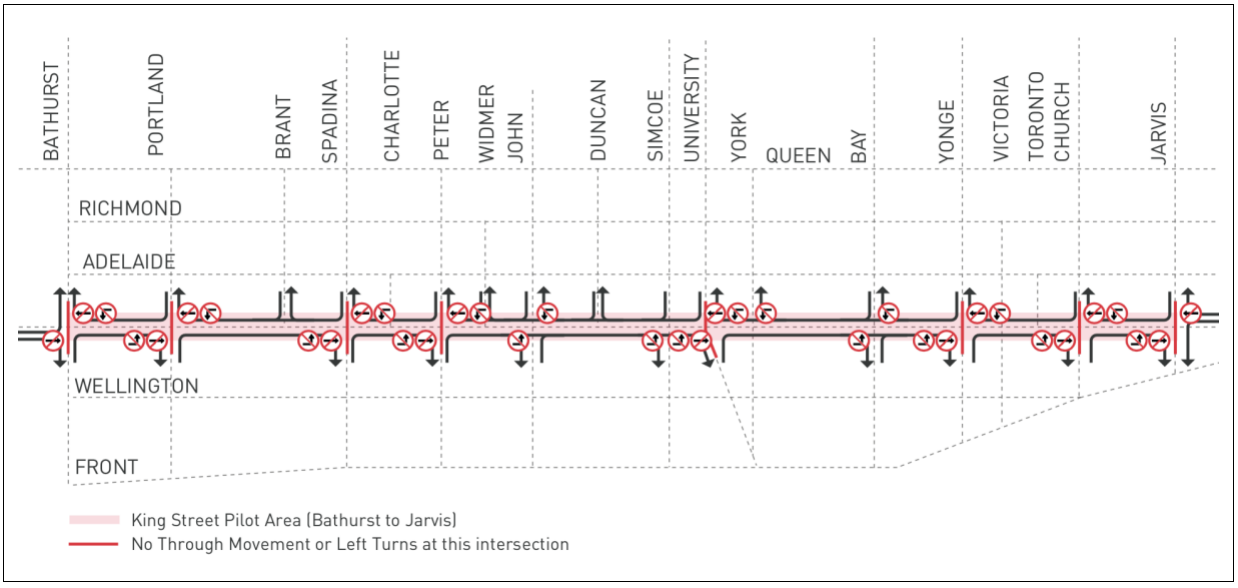

Figure 1.2.1. King Street Transit Pilot driving restrictions. Reprinted from *King Street Transit Pilot Postcard*, by City of Toronto (2018g).

The horizontal red lines shown on the map (see Figure 1.2.1) indicate the eight intersections where through movement is prohibited. At six of those eight intersections left turns are also prohibited. The two intersections where there are restrictions on through traffic but left turns are allowed are the two intersections at either end of the pilot project area (King Street and Bathurst Street as well as King Street and Jarvis Street). At these intersections, vehicles must turn either left or right. In addition, there are numerous other intersections where left turns are prohibited: John Street (both directions); Bay Street (both directions); York Street (westbound); and Simcoe Street (eastbound). However, there are two exceptions to these driving restrictions. The first is that between 10PM and 5AM taxis are allowed to travel through the intersections. The second exemption is that these restrictions do not apply to emergency services when they are responding to a call (City of Toronto, 2019).

In addition to the new driving restrictions, there have been changes made to parking as well. The main change is that all of parking spots along this stretch of King Street have been removed. In addition, in January 2018 the City of Toronto introduced a parking promotion which offered drivers up to two hours of free parking at GreenP parking lots in the area around the King Street pilot area (City of Toronto, 2019).

Changes impacting transit riders. In addition to the aforementioned driving and parking restrictions which were introduced through the pilot project – which certainly also impact transit riders – there have been numerous additional changes which directly impact transit riders more than any of the other four stakeholder groups. These changes mainly impact how riders wait for and board the streetcars.

The first change is that the streetcar stops, with two exceptions, were moved to the far side of the intersection. The two exceptions are at King Street and Portland Street and at King Street and Bathurst Street. The City of Toronto has stated that this change was made to increase the operational efficiency of the streetcars (City of Toronto, 2019).

The second change is that protected passenger waiting areas were installed in the curb lane in order to provide a safe way for riders to enter and exit the streetcars. The City has also installed ramps on all of these new waiting areas to ensure they are accessible.

Finally, in two particular locations – both the eastbound and westbound stops at King Street and Church Street – road murals have been added to the new protected passenger waiting areas. The City of Toronto has stated that these murals are meant to beautify the areas and to increase safety by bringing awareness to the new waiting areas where passengers enter and exit the streetcar (City of Toronto, 2019).

Changes impacting pedestrians and cyclists. The removal of on street parking within the pilot project area has allowed for other uses of those spaces, and the opportunity to create a place that is more comfortable for people to walk, sit and socialize. As was noted at the beginning of the paper, numerous public realm elements have been installed throughout the pilot project area with the goal of enhancing the pedestrian experience along this stretch of King Street. Enhancements that have been made to improve the public realm include:

- Public Space Installations and Parklets
    - As part of the Everyone is King Design Competition ten public space installations and two parklets have been created.
- Seating Areas
    - Three seating areas framed by trees have been installed throughout the pilot area.

- Planters
    - Planters have been installed throughout the pilot area to enhance the street, and to mark the end of the waiting areas and public spaces.
- Bike Corral and Bike Share Stations
    - Two bike corral stations and four bike share stations have been installed throughout the pilot area.
- Tactile Walking Surface Indicators
    - Yellow tactile truncated dome mats have been placed on the road at TTC stops to alert people with low or no vision of potential hazards, such as vehicles or cyclists.
- Mini Art Galleries
    - Eight mini art galleries have been installed along King Street by the Open Field Collective.

Changes made impacting local businesses. There have been various changes made as part of the King Street Transit Pilot which have impacted local businesses in the area. Some of the changes have directly impacted businesses—such as promotions run by the City—while other changes have had an indirect impact. An example of an indirect impact on businesses would be the prioritization of sustainable modes of transportation (particularly transit) over driving. The extent to which, or if at all, any one change impacts a business is dependent on a variety of factors and the impact is unique to each business.

The City of Toronto has outlined three main objectives for the pilot project, one of which is to support economic prosperity. In order to support this objective, the City of Toronto introduced a number of promotions and initiatives within the pilot area. The following are initiatives associated with the pilot project that have a direct impact on local businesses.

***Food is King promotion*.** This promotion, which ran from February 20–March 4, 2018, provided a $15 credit to be used at one of 52 participating restaurants within the pilot area. There were two caveats to this promotion. In order to participate you had to use the line-skipping app Ritual and you could not have previously used the Ritual app at that restaurant. The City of Toronto stated that this promotion resulted in an increase of approximately $400,000 in sales for participating restaurants compared with the weekly average three weeks prior to the Food is King promotion (City of Toronto, 2018f).

***Parking promotion*.** In January 2018, the City of Toronto partnered with the Toronto Parking Authority to launch a parking promotion which provides a discount of up to $10 when using the GreenP app and parking in the pilot area (City of Toronto, 2018f).

***Additional space for patios*.** In June 2018, 14 businesses began operating new on-street patios in the areas in front of their business that used to be parking including the patio that was implemented in front of the restaurant Oretta (see Figure 1.2.2).

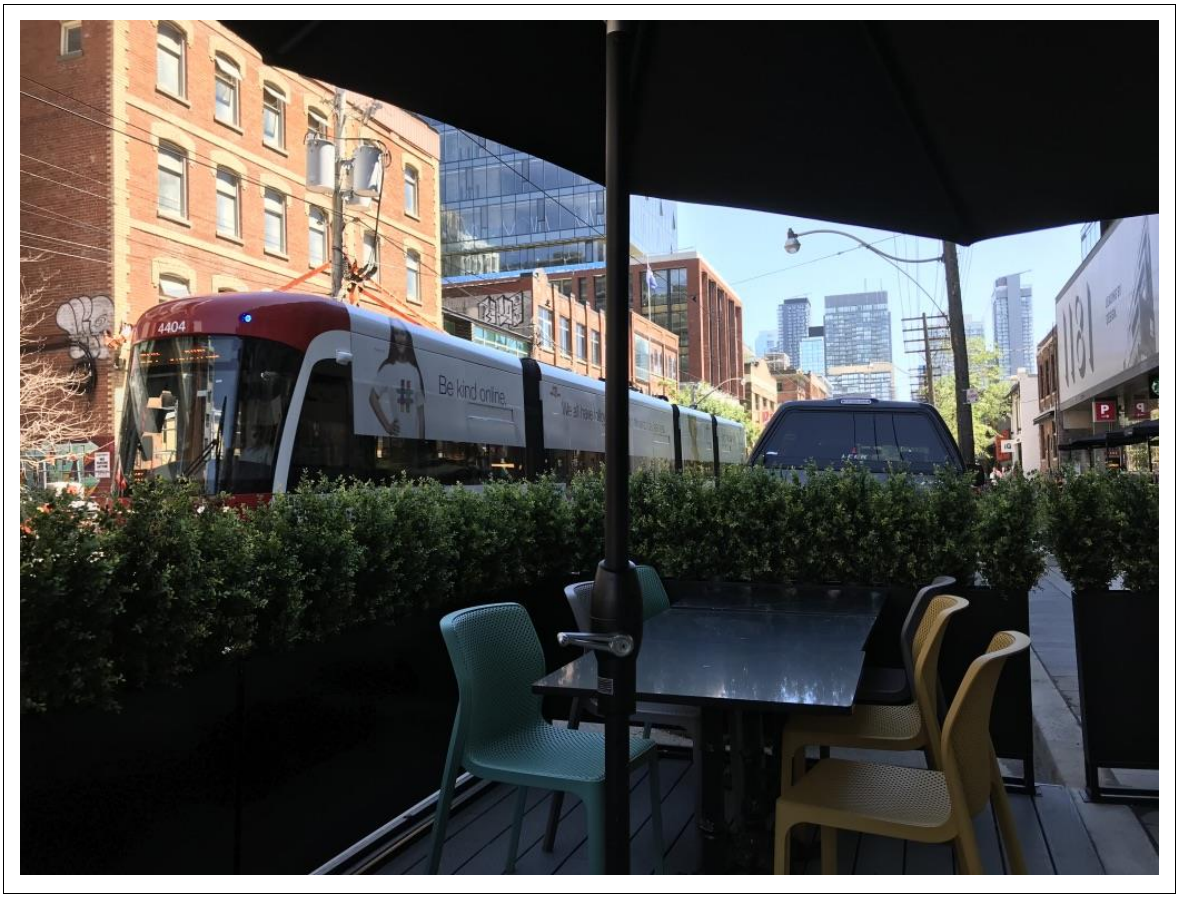

Figure 1.2.2. On-street patio installed in the curb lane in front of the restaurant Oretta. Photo by author.

There have also been various indirect impacts on local businesses as a result of the pilot project, including the public realm activations, driving restrictions, and prioritization of transit. The driving and parking restrictions have resulted in drivers not being able to travel directly along King Street to their destination and not being able to park directly in front of the business they are going to. Some businesses have reportedly significantly reduced revenues which they have attributed to this change. The result of those restrictions has been various improvements to the streetcar and significantly increased ridership, (up to 84,000 people each weekday from the baseline ridership of 72,000), and thus more people (and potential customers) in the area (City of Toronto, 2018a, 2018b, 2018c, 2018d, 2018e, 2018f). This is in comparison to the 20,000

vehicles that travelled along King Street prior to the pilot project being implemented (City of Toronto, 2019). The public realm activations were unveiled between April–June of 2018, and resulted in 26 new public spaces, including new seating spaces and public art, an example of which is the *Face to Face* public seating installation on King Street East just east of Yonge Street (see Figure 1.2.3).

Figure 1.2.3. Face to Face public seating installation on King Street East. Photo by author.

While it is difficult to evaluate the impact of the public realm improvements have had on business because the full implementation was not complete until the end of the time frame for this research (June 2018), there is a growing body of research which provides evidence of a correlation between pedestrian/public realm improvements and various economic benefits

including increased consumer spending (Bent & Singa, 2008; Clifton, K., Muhs, C., Morrissey, S., Morrissey, T., Currans, K., & Ritter, C., 2013; New York City Department of Transportation, 2013; Carmona et al., 2018)

The City of Toronto offered the space in front of the restaurants and cafés to those businesses first so they could use them as patios, while the remaining spaces were included in a design competition to animate those spaces. Businesses were able to choose to animate the space on their own or to have the space designed through the Everyone is King Design Competition. As of June 2018, nine licensed cafés have been installed in the curb lane throughout the pilot area (City of Toronto, 2019).

Quantifying the impact of any one indirect impact would be very difficult though because of the numerous other changes also made as part of the pilot, as well as all the factors impacting businesses which are external to the pilot. For example, the minimum wage increasing significantly just weeks after the pilot project was implemented impacts businesses yet is unrelated to the pilot.

Section 1.3: Methodology

The data used in this paper is both quantitative and qualitative in nature and has been collected and analyzed in order to gain a deeper understanding of the initial impact of the King Street Transit Pilot. In addition to collecting primary and secondary data, a review of literature was conducted to contextualize this primary research within the larger debate around congestion and mobility issues and how to deal with those challenges. The literature that has been reviewed discusses numerous methods to address congestion, such as transportation demand management as well as specific ways to prioritize public transit, such as bus rapid transit. The literature that

has been reviewed also discusses findings regarding various impacts of prioritizing sustainable modes of transportation.

The quantitative data used in this research was primarily obtained from comprehensive monthly updates on the King Street Transit Pilot that was released by the City of Toronto. This dataset includes a variety of transit specific metrics such as ridership, reliability, and travel times. It also includes data on the volume of and travel times for cyclists, pedestrians, and drivers within the Pilot area. In addition, the City of Toronto obtained point of sale (POS) data from the largest POS provider in Canada, Moneris Solutions Corporation. This data was used to assess the impact the Pilot has had on consumer spending. For each of these metrics, the City has provided baseline comparisons that were obtained prior to the start of the Pilot project. With the exception of the consumer spending (POS) data, the baseline comparisons were approximately one month long for each of the metrics and were obtained in the fall of 2017. The consumer spending data obtained by the City of Toronto is for the period of November 2014–June 2018. In addition, quantitative data collected by the TTC and analyzed by a local transit advocate, Steve Munro, was obtained in order to provide a more comprehensive understanding of changes that occurred after the implementation of the pilot project (Munro, 2018a). Both sets of quantitative data were analyzed in order to identify trends and to understand the impact on that various stakeholders.

To build on the quantitative data obtained from the City of Toronto and the TTC, interviews with 40 individuals from a variety of stakeholder groups were conducted as part of this research. These interviews made up the qualitative component of the data. Interviews were conducted with multiple local City Councillors, members of neighbourhood associations, transit riders, drivers, as well as businesses owners and organizations within the King Street Transit

Pilot area. The interviews were conducted with a wide variety of stakeholders in order to get a diverse perspective and understanding of the impacts and to be able to provide significant insight into the perspective of each of these stakeholder groups. See Appendix A for the list of questions used in these interviews. The limitation of this methodology is the bias that the interviewee may bring to the interview. This potential bias was mitigated by conducting interviews with numerous people from each of the stakeholder groups.

Sixteen people who are involved in this initiative in a professional capacity (i.e., urban planners, City Councillors, and representatives from local resident and business associations) were interviewed in order to gain a comprehensive understanding of the impact this pilot project has had on the various stakeholder groups. Local City Councillors were interviewed because as the elected representatives for everyone in their respective wards—including the businesses—it is their responsibility to look at issues in a balanced way and from the perspective of all of their constituents. While both City Councillors directly within the pilot area at the time (Councillor Cressy and Councillor Troisi) as well as Councillor Layton (who represents the neighbouring communities to the west of the pilot area), were invited to share how the pilot has been impacting their constituents, despite repeated attempts, I was not able to schedule an interview with former Councillor Troisi. Troisi, previously appointed to replace a deceased Councillor, was unsuccessful in her campaign to be re-elected during the 2018 municipal election.

In addition, the three Business Improvement Areas (BIA) within the pilot boundaries—Toronto Entertainment District BIA; Financial District BIA; and the St. Lawrence Market Neighbourhood BIA—as well as the Liberty Village BIA which is also strongly impacted by the pilot, were invited to participate in interviews for this research. This was done to learn more

about the impact the project has been having on businesses and to gain an understanding of how widespread the negative impact being reported in the media actually is. Unfortunately, the three BIA's within the pilot area declined to comment on the impact of the project until after the pilot has been completed. This has made it difficult to verify both how widespread the reported negative economic impact has been and the veracity of those claims, which have not been independently verified, and have been directly contradicted by the POS data released by the City of Toronto.

A structured interview format was selected for these interviews in order to maintain consistency between the various interviews conducted. The questions used (see Appendix A) were drafted with the goal of acquiring a comprehensive understanding of how this pilot project has impacted the various stakeholder groups. See Appendix B for the list of interviewees and their job title and Appendix C for more detailed information on the structured interviews conducted including the date and location of the interview.

In addition to the aforementioned people who were interviewed in their professional capacity, 24 individuals who walk, drive, and/or take transit within the pilot area were interviewed. Building on the quantitative data collected by the City of Toronto and the qualitative data from the 16 structured interviews, these interviews were conducted in order to better understand the initial impact this initiative has had on the various stakeholders. These interviews were conducted using a semi-structured interview style, often either on the streetcar or at the transit stop. Individuals were not asked to disclose their name during these semi-structured interviews. Prior to asking specific questions about the research, each participant was provided with a brief explanation of the research being conducted and asked if they would be willing to

answer a few short questions related to their experience with the King Street Transit Pilot. It was explained that participation in the interview was strictly voluntary and that they were free to stop participating at any time. Those that agreed to participate in the interview were asked five questions designed to understand their experience with the King Street Transit Pilot. See Appendix D for a sample of the questions used for the semi-structured interviews.

The qualitative research component required ethics approval from the Delegated Ethics Review Committee. The Committee has been delegated authority to review research ethics protocols by the Human Participants Review Sub-Committee, York University's Ethics Review Board, and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines.

Section 2: Literature Review

There is a comprehensive academic literature that has been developed in response to the pressing issues of congestion and urban mobility and a variety of potential solutions to address these issues. These are issues which cities around the world are grappling with and this paper builds on that discussion by assessing the initial impact of the King Street Transit Pilot, an innovative initiative designed to reclaim public space and prioritize sustainable modes of transportation. There is significant analysis and research into potential solutions to these issues. The following review of literature begins by highlighting numerous potential solutions to these issues. There is also a substantive discussion in the literature about the numerous benefits of prioritizing sustainable modes of transportation. A summary of this discussion concludes the literature review.

Solutions to congestion and mobility issues. As a result of the significance of these issues, academics have engaged in a robust debate about how to deal with the aforementioned issues. A summary of that discussion is the focus of this subsection.

Transit oriented development. One method to mitigate the impacts of sprawl and the reliance on the automobile is transit oriented development (TOD). There has been significant research into this topic including the impact it has on: travel behaviour (Qi, 2017), residential property prices (Sim, Krause, & Winson-Geideman, 2016), and transit ridership (Hendricks, 2005). Understanding the impact on travel behaviour and transit ridership is very important to achieving the desired modal shift away from the automobile, in order to reduce congestion and sprawl. Renne (2008) notes an important distinction between transit-adjacent development (TAD) and transit-oriented development (TOD):

> Both concepts refer to the area within a 10-min walk around a major transit station. While a TOD describes a station-area precinct that is compact, mixed-use, and facilitates transit connectivity through urban design, a TAD is "physically near transit [but] fails to capitalize upon this proximity… [It] lacks any functional connectivity to transit—whether in terms of land-use composition, means of station access, or site design. (Renne, 2008, p. 1)

In Ontario, provincial policy in the form of the *Growth Plan for the Greater Golden Horseshoe* (GGH) supports transit-oriented development. One of the guiding principles of the *Growth Plan for the GGH* is to "prioritize intensification and higher densities to make efficient use of land and infrastructure and support transit viability" (Ministry of Municipal Affairs and Housing, 2017, p. 5). The City of Toronto's *Official Plan* (Lintern, 2019a), which is required to conform

to the *Growth Plan for the GGH,* focuses residential growth downtown as well as in areas identified as centres and avenues. Concentrating growth in this manner is done in part to more efficiently provide vital infrastructure such as transit (Lintern, 2019d, p. 3). The City's *Official Plan* calls for a significant portion of the growth in the City of Toronto to be in areas of the city which are identified in the *Official Plan* as avenues. The vision for the avenues, as laid out in the *Official Plan,* is mixed use development with a focus on residential intensification. In these areas, the desired scale of development is mid-rise buildings. The appeal of this form of development is that it is able to provide new residential and employment opportunities at a scale which supports pedestrian-oriented streets and the efficient provision of transit (Brook & Reid, 2016).

When planners are trying to enact a modal shift in suburban areas, they face unique challenges compared to more dense, mixed-use areas. Due to the low densities found in American suburbs, Downs (2004) has found that communities which focus on intensifying near rapid transit stops have been much more successful at enacting a modal shift to transit than increasing the overall density across the urban fringe as a whole. The same research found that areas within 2000 ft (609 m) of rapid transit stops have a much higher transit usage compared to areas outside of that threshold. This reinforces the importance that transit-oriented development has on transit usage.

Transportation demand management (TDM). An obstacle in getting people to shift to more sustainable modes of transportation is that for many people—especially for older generations—driving is habitual. Large portions of entire generations have grown up driving

almost everywhere they go and that way of getting around is all they know, thus making change even more difficult (Tyrinopoulos & Antoniou, 2013).

Transportation demand management (TDM) strategies aim to enact a modal shift to more sustainable modes of transport as well reduce the overall length and time travelled (Lachapelle, 2016). Lachapelle (2016) found that transit needs to be competitive with car usage in order for there to be a significant modal shift. There are a variety of factors that influence people's modal choice, but cost and ease of use of alternative options are two major factors that are cited.

Changing travel characteristics (e.g., mode, distance, etc.) require a comprehensive program that includes viable alternative transportation options, as well as land use that supports these options. Therefore, transit-oriented development (TOD)—developing and organizing a mix of uses built at transit supportive densities around transit stations and corridors—is very important to implementing the desired shift away from single occupancy vehicles.

Research conducted by Downs (2004) has found that restricting automobile usage has a much more significant impact on congestion compared to increasing the quality or quantity of transit. This provides evidence of the merits of transportation demand management. There are various strategies that can be used to increase the financial costs of driving, including through the use of road tolls, licensing fees, fuel surcharges, and congestion charges. Reducing the costs of alternative modes of transportation, including through discounted transit passes and bicycles, can also have a positive impact on shifting away from single occupancy vehicles (Lachapelle, 2016).

Multimodality. The development of multimodal transportation systems, also referred to as "complete streets," has been identified in the literature as an important way to address congestion (Dowling, Flannery, Ryus, Petrisch & Rouphail, 2008; Burden & Litman, 2011;

Anderson et al., 2015). Improving streets to support active transportation options (e.g. walking, and cycling) can be particularly beneficial to reducing local congestion problems by limiting the number of people who drive for short trips because of inadequate transportation alternatives (Burden & Litman, 2011). Designing "complete streets" is also a policy objective for the City of Toronto identified in the City of Toronto's *Official Plan* which states, "while it is not possible or appropriate to try and accommodate every user on every street, the goal is to create a street network which allows for all modes of transportation to be safe and efficient options" (Lintern, 2019d, p. 3). The goal of compete streets is to create a multimodal transportation network that works for and is designed to support all modes of transportation. However, that does not need to involve highly capital intensive, large scale projects such as building new subways or light rail. More cost effective solutions to redesign streets such as adding dedicated lanes for bicycles or transit and even simply making public realm improvements such as wider sidewalks and street art – which encourage walking – have been shown to be effective ways to reduce the number of single occupancy vehicles and in turn reduce congestion (Al-Dubikhi & Mees, 2010; Carey, 2002).

For example, Vijaykumar (2016) evaluated the impact of street redesign initiatives introduced in five cities including Vancouver and New York City. One of projects that were evaluated was the implementation of transit only lanes on Church Street in San Francisco, California. After the transit only lanes were installed transit reliability improved by 27% and there was a 14% reduction in travel time. In addition to the benefits for transit riders, the findings indicate that drivers in the area did not experience significant delays in travel time.

The implementation of bus rapid transit is becoming increasingly popular because of its cost-effective ability to improve travel time and reliability. These improvements were demonstrated in a large study conducted by Levinson, Zimmerman, Clinger and Gast (2003) which reviewed the findings of case studies which analyzed the impact of BRT being implemented in 26 cities in North America, South America, Europe and Australia, including in Ottawa and Vancouver. The research showed that the travel time savings varied based on a variety of factors, one being the level of congestion in the area prior to the implementation of the improved transit, but the authors determined that the main factor was whether the buses travelled in a separate right-of-way or in bus lanes where the time savings were less. The findings revealed that the time savings were approximately two to three minutes per mile when operating in a separated right-of-way and approximately one to two minutes per mile when travelling in bus lanes.

Another example of the positive benefits of bus rapid transit is the implementation of BRT in York Region, a rapidly growing suburb north of Toronto. In this case there have been very significant improvements in travel times. After the first year of implementation travel times on the eastern portion of Highway 7 had improved by 42% and on the western portion the improvement was 35% (York Region Rapid Transit Corporation, 2017).

Positive impacts of sustainable transportation. As was just noted, the increased use of sustainable modes of transportation can reduce congestion. In addition, there are a multitude of other benefits that result from prioritizing sustainable modes of transportation. The remaining portion of this section outlines the discussion in the literature in regard to the various positive impacts associated with prioritizing sustainable transportation.

Impact on congestion. It is well documented that congestion and commute times are a significant issue in Toronto and the surrounding region. The Toronto Region Board of Toronto report, *Toronto as a Global City: Scorecard on Prosperity 2015* identified Toronto as having the second highest commute times in North America. Previously, Metrolinx (2008b) released a report which found that the annual cost of congestion for the Greater Toronto and Hamilton Area was $6 billion in 2006. Of that total, $3.3 billion was the annual cost to commuters while $2.7 billion was due to lost productivity. Metrolinx is predicting that by 2031, these costs will rise to $7.8 billion and $7.2 billion respectively with a total cost of congestion being estimated at $15 billion by the year 2031 (Metrolinx, 2008b). This shows the significant economic importance of making changes to reduce congestion in the region.

Research released by the University of California, Berkeley has found that the impact public transit has on congestion is much larger than previously believed (Anderson, 2014). By analyzing the impact of a sudden strike by transit workers in Los Angeles, Anderson (2014) found that without public transit operating, the average highway delay increased by 47%. Anderson (2014) concluded that "contrary to the conclusions in the existing transportation and urban economics literature, the congestion relief benefits alone may justify transit infrastructure investments" (p. 25). The author did note that both the model calibration and the regression discontinuity estimates apply specifically to the Los Angeles metropolitan area, and as a result, the magnitude of the impact is unlikely to generalize to other urban areas in the United States. However, Anderson (2014) stated there are good reasons to believe that the qualitative effects of transit on congestion are similar in other large cities in the United States. The applicability of the

research findings to other large American cities is mainly because Los Angeles has comparable per capita transit ridership and congestion levels to other large urban areas in the United States. Using Melbourne, Australia as a case study, researchers analyzed the impact public transit has on congestion. They compared the level of congestion with and without public transit and found that public transit reduced the number of severely congested road links by over 60% (Nguyen-Phuoc, Currie, Gruyter, & Young, 2017). They also found that vehicle travel times and delays were reduced by 48% (Nguyen-Phuoc et al., 2017). This research conclusively shows that public transit significantly reduces traffic congestion.

Impact on local businesses. There is a growing body of evidence of the various economic benefits associated with prioritizing sustainable modes of transportation and/or public realm improvements. One such study was conducted by Bent and Singa (2008) who researched the modal choices and spending patterns of consumers in downtown San Francisco. There was a belief among many business owners that their patrons arrive primarily by car, and that drivers spend more money than those who travel via other modes of transportation. Despite that perception, the authors found that neither of these beliefs was supported by the data. In fact, they found that rather than drivers spending the most, they actually spent less than both consumers who walked or took transit there. The authors also reported that these findings are consistent with similar observations in other cities.

Another study, also looking at San Francisco, found that the conversion of the Central Freeway into the pedestrian and cyclist friendly Octavia Boulevard significantly increased local commercial activity (Congress for New Urbanism, 2008). Similarly, research conducted by Tolley (2011) found that streetscape improvements and changes to make places more walkable

resulted in the creation of vibrant places that people want to stay and enjoy rather than just pass through and as a result the findings revealed a significant increase in pedestrian activity and in turn increased economic activity in the surrounding area.

In 2012, the New York City Department of Transportation released a report, *Measuring the Street: New Metrics for 21st Century Streets*, which evaluated the economic impact of street redesigns. To do this, the researchers looked at various indicators of economic vitality including sales tax receipts and the number of visitors. They found several examples of significant increases in retail spending after improvements to walking, cycling, and/or public transit were made:

- After bike lanes were installed on 8th Avenue and 9th Avenue in Manhattan, there was a 49% increase in retail sales compared to 3% borough-wide.
- After a parking lot in Brooklyn was converted into a public park, retail sales increased by 172% compared to 18% borough-wide.
- After a bus lane was installed on Fordham Road in the Bronx, retail sales in the area increased by 71% compared to 23% borough-wide.

Research conducted by Clifton et al. (2013) found that shoppers who arrive by car spend less than those who walk, bike, or take transit there. This was also found by Sztabinski (2009) who looked specifically at the spending patterns of shoppers at retail establishments in Toronto's Annex neighbourhood. The findings revealed that 90% of patrons arrive by walking, cycling or public transit, and that customers who walk or cycle to the business spend the most money. As a result, the author argued there would be economic benefit to reallocating space to prioritize these customers.

A study recently conducted by researchers from University College London's Bartlett School of Planning provides further evidence of the economic benefits of creating more walkable, pedestrian-friendly spaces (Carmona, Gabrieli, Hickman, Laopoulou, & Livingstone, 2018). The researchers evaluated the impact of various streetscape improvements in London and found that there was a 93% increase in the number of people walking, a 7.5% increase in retail rent, a 17% decline in retail vacancies, and a 216% increase in what the author defines as "leisure based static activities," such as sitting on a bench or going into at a café.

Impact on the environment. It is important to acknowledge and factor in the greenhouse gas emissions (GHG) that are produced during the construction of a major infrastructure project, such as a subway line. When the greenhouse gas emissions produced constructing the project are factored into the environmental impact assessment, it can take years or even decades before the net greenhouse gas impact is positive. Researchers from the University of Toronto and the University of Cambridge calculated the net greenhouse gas impact of the Sheppard subway line in Toronto and found that depending on the outcome of different variables (ridership being a major one), it could take anywhere between 11 to 35 years before the Sheppard subway line has "paid back" the total greenhouse gas emissions used to build it (Saxe, Miller, & Guthrie, 2017). This research shows the importance of pairing public transportation infrastructure with policies designed to encourage public transit use, and to discourage the use of single occupancy vehicles in order to achieve ridership levels which will have the greatest environmental impact possible.

Despite that caveat, in 2015, transportation was the second largest contributor to Canada's greenhouse gas emissions, with transportation making up 24% of Canada's total greenhouse gas output (Government of Canada, 2018). A report released in 2015, by

Environment and Climate Change Canada, noted that just under half (48%) of the greenhouse gas emissions produced by the transportation sector were from passenger vehicles (i.e., cars and light trucks). As a result, a mode shift away from the private automobile to public transit is an essential component of reducing greenhouse gas emissions. In addition to the impact transit has on greenhouse gas emissions, it also can facilitate compact development and improve air quality by reducing overall vehicle emissions (United States Federal Transit Administration, 2010).

The facilitation of compact mixed-use development around transit stations (often referred to as transit-oriented development) can lead to transit indirectly contributing to a variety of additional environmental benefits. This form of development reduces the distance people need to travel on a daily basis, reducing congestion on the roads and in turn, the amount of time people are stuck in traffic. Both of these lower vehicle emissions.

Impact on health. There are also numerous health benefits associated with the increased use of sustainable transportation options. In 2011, the World Health Organization (WHO) released a report, *Sustainable Transport: Sourcebook for Policy Makers in Developing Cities*, which discusses research from around the world and provides evidence of the positive health benefits of sustainable transportation (Dora, Hosking, Mudu & Fletcher, 2011). It discusses various health risks associated with transport—exposure to air pollutants and risk of injury from traffic collisions—as well as the associated health benefits if the travel involves physical activity (such as cycling to work, or, walking briskly to a transit stop). The report cited evidence that the transport sector is responsible for a large proportion of urban air pollutants, which negatively impact health. They also provided evidence that transport related pollutants increase the risk of various health problems, including cardiovascular and respiratory disease, cancer, and adverse

birth outcomes; that exposure is linked to higher death rates (Krzyzanowski, Kuna-Dibbert, & Schneider, 2005). The World Health Organization has concluded that "an emphasis on multi-modal transport development in cities is integral to air pollution mitigation strategies" (Dora et al., 2011, p. 5).

Connection to the King Street Transit Pilot

This literature was reviewed in order to contextualize the primary research. It provides examples of methods used to address congestion and includes examples of initiatives implemented in other cities. The section on transportation demand management (TDM) discusses key principles and various benefits of TDM including reduced congestion. Key to both the King Street Transit Pilot and transportation demand management is making changes which influence the increased use of sustainable modes of transportation in an effort to facilitate a more efficient transportation network. Another method discussed to reduce congestion was transit oriented development (TOD. The literature discussed in this section provided strong evidence that transit oriented development is an important component of reducing congestion. In addition, transit oriented development is an important component of the City of Toronto's *Official Plan (Lintern, 2019a)* and has occurred along King Street. This literature also discusses initiatives that have been implemented in cities around the world which have similarities to the King Street Transit Pilot. Research into the impact of these various initiatives such as street redesigns to prioritize sustainable modes of transportation, cite various positive effects for transit riders, pedestrians, drivers and local merchants. Based on the research in the review of literature the hypothesis of this research is that the King Street Transit Pilot will have positive benefits on business, transit riders and pedestrians and an insignificant impact on drivers.

Section 3: Overview of Planning Policy in Toronto

While the review of literature situated the King Street Transit Pilot within the larger academic debate around how to address congestion, this portion of the paper focuses on policies which guide growth and development in Toronto and the implications of those growth patterns. This section begins by reviewing two policy documents – the *Growth Plan for the Greater Golden Horseshoe* and the City of Toronto's *Official Plan* - which both have a significant impact on why growth has occurred the way it has in Toronto. In the context of this research, these documents are important because they help to explain why some areas of the city are growing rapidly – such as the area where the King Street Transit Pilot was implemented – while many other areas are seeing little to no change. More relevant to this research topic is the resulting impact this "spiky" form of intensification has on infrastructure. This section concludes by looking at some of the reasons why infrastructure does not always keep up with the pace of intensification - which is particularly problematic in these high growth areas – and something which has occurred in the area where the King Street Transit Pilot was implemented.

Section 3.1: The Growth Plan for the Greater Golden Horseshoe

The Growth Plan for the Greater Golden Horseshoe was introduced by the Province of Ontario in 2006 to help manage growth and development in the region. The Greater Golden Horseshoe is a rapidly growing region of southern Ontario which is anchored by Toronto. As a result, this policy document and the City of Toronto's Official Plan – which will be discussed shortly – are both incredibly important in determining where and at what scale growth will occur in Toronto.

The Greater Golden Horseshoe region is currently home to 9 million people – which is a quarter of the population of Canada - and by 2041 is projected to grow to a population of 13.5 million people. To put that growth into context, this is one of the fastest growing regions in North America (Ministry of Municipal Affairs and Housing, 2017). It would be an understatement to say a plan for managing growth in the region is very important.

An overarching goal of the *Growth Plan for the GGH* is to ensure that the region grows in a more sustainable way, based on intensification rather than sprawl (Ministry of Municipal Affairs and Housing, 2017). To facilitate this intensification, certain areas across the region have been designated as locations which are suitable to accommodate, to varying degrees, an increase in density. *The Growth Plan for the GGH* directs growth to areas designated as urban growth centres (five of which are in Toronto), major transit station areas, intensification corridors, and employment lands. Each of these is briefly described below.

Urban growth centres. *The Growth Plan for the GGH* states that the urban growth centres, which are identified in Schedule 4 of the *Growth Plan*, are to be planned to accommodate a significant share of population and employment growth. In addition, they are also to accommodate and support major transit infrastructure; to serve as high density employment centres; and to be focal areas for institutional and region-wide public services.

The urban growth centres which are located in Toronto (Yonge-Eglinton Centre, Etobicoke Centre, North York Centre, Scarborough Centre, and Downtown Toronto), have density targets of 400 residents and jobs combined per hectare, which must be met by 2031. These urban growth centres are referred to in the City of Toronto's *Official Plan* and correspond to the areas identified in the *Official Plan* where the most intense growth should occur.

Major transit station areas and intensification corridors. Like the urban growth centres, both major transit station areas and intensification corridors are to be identified by municipalities in the respective official plans, and are to be planned to achieve a mix of uses at densities that can support existing and planned transit infrastructure. Major transit station areas are multi-modal transportation hubs, while intensification corridors are areas that will accommodate local services, including recreational, cultural and entertainment uses, rather than the region-wide and institutional services that are planned for the urban growth centres.

Employment lands. Employment lands are important for the economic success of the region and are set aside to accommodate the projected growth in employment. Like all the other areas designated to accommodate growth, the *Growth Plan* states in section 2.2.6.10 that employment lands will facilitate the development of transit-supportive, compact built form and minimize surface parking (Ministry of Municipal Affairs and Housing, 2017).

Section 3.2: The Official Plan

The City of Toronto's *Official Plan* (Lintern, 2019a) provides the guiding vision for the City of Toronto, currently, up until 2031, and as a result is very influential in terms of where growth and development does and does not occur in the city. While it is outside of the scope of this paper to conduct a detailed analysis of the *Official Plan* there are a few particularly important themes that should be highlighted.

The first is that Toronto, much like the larger surrounding region, is projected to grow significantly both in terms of population and employment. By 2031, it is projected that Toronto will be home to 3.19 million people and 1.66 million jobs (Lintern, 2019a). It is also important to note that growth is portrayed in the *Official Plan* in a very positive light. Growth is not simply

seen as just a good thing, rather growth is viewed as being essential to Toronto's ability to compete for capital and talent internationally. When the City of Toronto was drafting their first new official plan after amalgamation, which was introduced in 2006, changes were introduced which made development less restrictive, arguably to encourage significant growth in the City of Toronto (Boudreau, Keil and Young, 2009, p. 103).

The second important overarching theme of this this *Official Plan* is that there are limited areas in the city which are deemed suitable to accommodate that significant growth. This is made clear in the City's *Official Plan* which states that "almost three-quarters of the City's land area is taken up by our residential neighbourhoods, watercourses, ravines and parks. These areas can expect to see little physical change" (Lintern, 2019c, p. 3).

This was not always the case though. This significant restriction on where growth can occur was a key element of Toronto's *Official Plan* introduced in 2006. Academics have argued that the reason for this dates back to 1969, more specifically the new *Official Plan* that the City of Toronto introduced in that year which called for significant high-rise development. It is argued that the pushback on growth that occurred thirty years before in response to that official plan significantly influenced the 2006 *Official Plan* (Boudreau, Keil and Young, 2009, p. 104). The design of the 2006 *Official Plan*, specifically this strong restriction on growth in many parts of the city, is still a major component of the current *Official Plan*, and thus still impacts growth and development in the city today.

As a result of this policy shift, growth is only deemed appropriate in at most 25% of the city. However, an analysis of the *Official Plan* reveals that the percentage of land available for

intensification is actually significantly smaller than 25%. Taken together, an overarching theme of the *Official Plan* is that intense growth is encouraged, but only in specific locations of the city. This puts a significant strain on the infrastructure in those areas that are accommodating the desired growth and makes it critical that infrastructure is improved in these areas.

Inherent in intensification—which is central to both the *Growth Plan for the Greater Golden Horseshoe* and the City of Toronto's *Official Plan*—is increasing density in selected locations rather than building sprawling low-density developments. In the introduction to chapter two of the *Official Plan* this intention to steer growth to certain areas and away from other areas is made clear by stating that, "steering growth and change to some parts of the City, while protecting our neighbourhoods and greenspaces from development pressures, is the first layer of a sound planning process for shaping the City's future" (Lintern, 2019c, p. 1).

That statement makes it clear which locations the *Official Plan* is restricting growth in, however, it is not clear in this statement where the projected growth is being directed to. For that, you need to look at two maps in the *Official Plan*: the land use designations map and the urban structure map.

In Toronto's *Official Plan* there are a total of eight land use designations, which are shown on the land use designations map (see Figure 3.2.1). As the name would suggest, these designate what the land in that area can be used for.

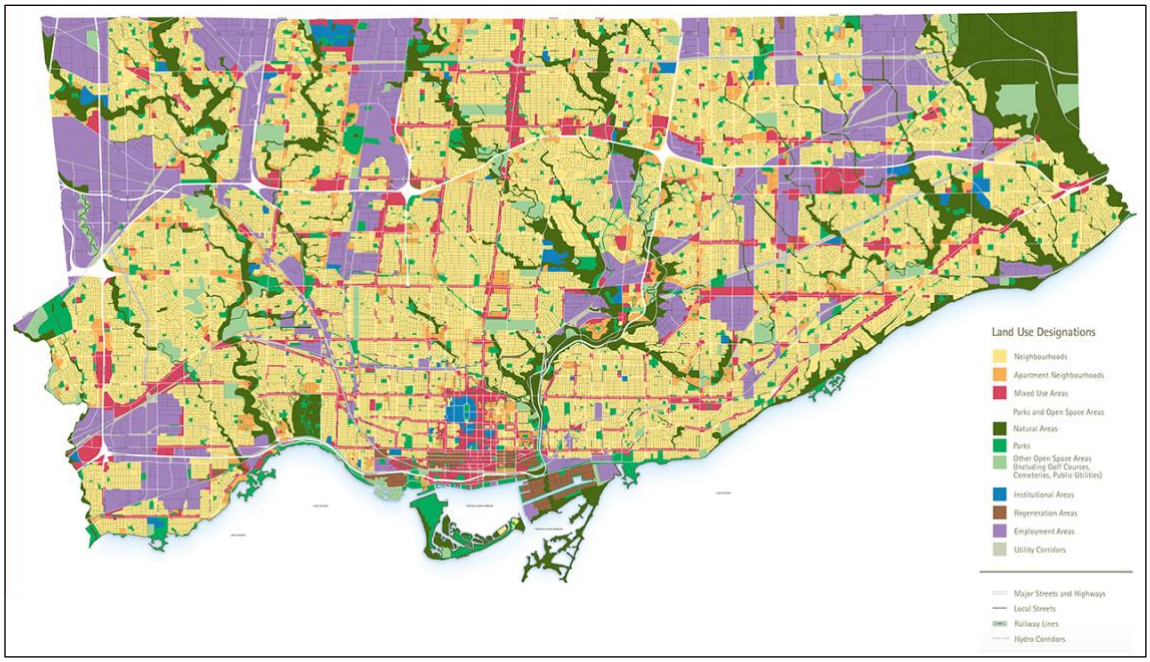

Figure 3.2.1. Land use designations in the City of Toronto. Reprinted from *Toronto Official Plan*, by Lintern, G. (2019h).

Four of the land use designations have been deemed suitable for accommodating growth. These are the mixed use, regeneration, institutional, and employment areas. This is in contrast to the remaining four land use designations which the *Official Plan* largely protects from development: neighbourhoods, apartment neighbourhoods, parks and open space areas, and utility corridors. Totalled together, the four land use designations deemed inappropriate to accommodate any more than moderate growth account for approximately 75% of the land area in the City of Toronto (Lintern, 2019c, p. 3). This includes the neighbourhoods designation marked in yellow on the land use designations map (see Figure 3.2.1), which are often referred to as "the yellow belt." This is likely based on a combination of two things: the colour yellow being used to indicate this land use designation on the map and that much like in the Greenbelt, development in the so called "yellow belt" is also largely off limits. While protecting our greenspaces and

utility corridors makes a lot of sense, the strong protection afforded to the areas designated as neighbourhoods and apartment neighbourhoods seems to be less justified, especially when you consider the pressure that puts on the remaining portions of the city. Concentrating a large portion of the significant growth occurring in a rapidly growing city such as Toronto can lead to an incredible strain on the infrastructure in that area. In these parts of the city which are home to significant intensification, it is even more critical that the infrastructure in these areas is improved in line with new development. This issue of infrastructure, in this case specifically public transit infrastructure, not keeping pace with new development has occurred in the area where the King Street Transit Pilot was implemented and this lack of investment in critical infrastructure is the reason why the pilot project which is the focus of this research paper is necessary in the first place.

A key element of Toronto's current *Official Plan* is the protection of the lands designated as neighbourhoods and apartment neighbourhoods and that these areas will remain largely stable and that development in these areas will need to help "protect and reinforce the existing character of these areas" (Lintern, 2019e, p. 1). Although the land use designations deemed appropriate for intensification cover 25% of the land in the city, Mirabelli (2017) noted that much of it ends up in a much smaller percentage of the city. This is because a large percentage of the employment lands, which are marked in purple on the land use designations map (see Figure 3.2.1), are outside of the core of the city, are low density, and are generally areas where this is not significant intensification. Taken together, this helps to explain why there is such intense growth in certain areas of the city and little to no growth in other areas.

Another important map in Toronto's *Official Plan* is the urban structure map which illustrates the areas in the city where growth and intensification are being directed to (see Figure 3.2.2). The City of Toronto has identified where they believe the best locations to accommodate the projected growth are. These areas are shown on the urban structure map: avenues; centres; employment areas; and the downtown and central waterfront (see Figure 3.2.2).

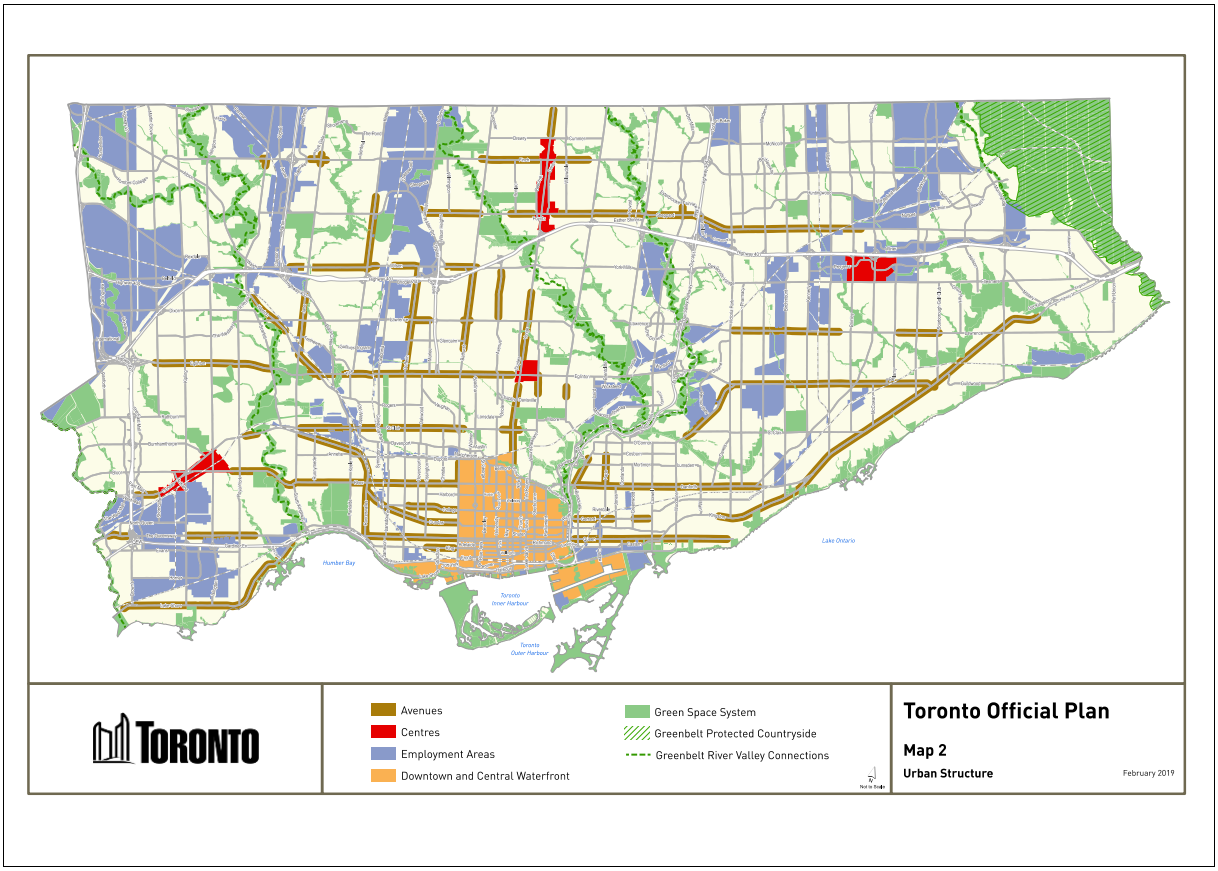

Figure 3.2.2. Planned urban structure in the City of Toronto. Reprinted from *Toronto Official Plan*, by Lintern, G. (2019g).

It is stated in the *Official Plan* that these areas were selected because they have good access to transit and a number of properties with redevelopment potential. In addition, it is specifically stated in chapter two of the *Official Plan* that another reason growth is being directed

to these areas is to, "protect neighbourhoods, green spaces and natural heritage features and functions from the effects of nearby development (Lintern, 2019c, p. 5)."

It is important to realize that substantial growth, although only in designated areas of the city which are identified on map two of the *Official Plan* (see Figure 3.2.2), in combination with the protection of existing neighbourhoods and green spaces, is at the heart of this *Official Plan*. The result of this is that there is a high concentration of growth in certain areas of the city, something which becomes problematic if appropriate improvements to the infrastructure are not made. This lack of investment in infrastructure, certainly in terms of transit, required to keep up with the increased demands of intense development has certainly occurred along the portion of King Street. The fact that congestion got so bad on portions of King Street that at some parts of the day it was faster to walk than to take the streetcar is emblematic of this (City of Toronto, 2017c). Some of the reasons why this has occurred along King Street are briefly discussed below.

Section 3.3: Reasons for a Gap Between Supply and Demand of Infrastructure on King Street

This is not intended to be a comprehensive discussion of all the reasons infrastructure did not keep up with demand, nor is it meant to be a comprehensive explanation of all the reasons why congestion got to the level that it did, on the stretch of King Street where the pilot project was implemented. The intention of this subsection of the paper is to provide insights – which were gained from interviews with current and former high-ranking planning officials at the City of Toronto – into some of the reasons why the gap between supply and demand occurred along this stretch of King Street.

A major reason is the political nature of planning in Toronto. While planning staff are tasked which doing comprehensive planning analysis and providing advice to Toronto City Council in terms of whether to approve a development application, it is just that, a recommendation. After staff have provided Council with their advice the process becomes much more political. Toronto's Chief Planner at the time the King Street Transit Pilot was being designed, Jennifer Keesmaat, pointed to political decisions as a factor that contributed to infrastructure not keeping pace with development on King Street (personal communication, July 3, 2018). Keesmaat specifically noted the issue of City Planning staff consistently recommending that Council not approve development applications in Liberty Village, a rapidly growing area less than two kilometres west of where the pilot project was implemented, without improving critical infrastructure in the area first. The former chief planner noted that in these cases the issue was not with the proposed building itself, rather the concern was around whether the infrastructure in the area could handle the increased demand. Keesmaat said what repeatedly happened is that Council would approve the development without improving the infrastructure, something which she said contributed to the congestion along King Street. While she said this issue of infrastructure not keeping pace with development is not unique to Toronto, she said what is unique to Toronto is the combination of how fast the population has grown and not investing in infrastructure.

The relevance of this policy discussion to the research topic of this paper is that these policies explain reasons why so much intensification occurred along King Street, and the discussion around the politics of planning helps to understand why in addition to that there has been a lack of investment in infrastructure. It is that combination that of rapid growth aligned

with a lack of investment in infrastructure – specifically investment in sustainable modes of transportation - that contributed greatly to the congestion on King Street, and thus the need for the King Street Transit Pilot in the first place.

Section 4: Findings

The purpose of the research discussed in this paper is to determine what the initial impact of the King Street Transit Pilot has been on the four stakeholder groups identified at the beginning of the paper – transit riders, drivers, pedestrians, and business owners. This section of the paper discusses the findings of the research which has been conducted in order to determine this impact. As was noted in the introduction to the paper, this research assesses the initial impact of the pilot project, which for the purpose of this paper is the period between November 12, 2017 and May 31, 2018. The findings are organized by stakeholder group and then further by the quantitative and qualitative data that was collected in order to assess the impact of the pilot project on that stakeholder group.

Section 4.1: Impact on Transit Riders

When assessing the King Street Transit Pilot project's impact on transit users, it is important to be cognisant of the fact that there are numerous factors which impact the overall commute time. It is the change in the total commute time (door to door) which riders are evaluating the pilot project on, rather than any one metric. For example, the change in average travel time on the streetcar, while important, is just one of many factors.

Broadly speaking, the commute can be broken down into two categories: the wait time for an available streetcar and the travel time itself. The interviews conducted with transit riders revealed that for both wait time and travel time, reliability was a major concern. If the wait time

for a streetcar is sometimes four minutes and sometimes 20 minutes, you need to plan for it to be 20 minutes. Likewise, if the travel time on the streetcar can range significantly, you need to plan for the longest possible commute time in order to avoid being late. When the wait times and travel times range this much it has a significant impact on the consistency of the overall travel time and thus negatively impacts the experience of taking transit.

During the interviews conducted as part of the research for this paper, transit riders reported improvements to both the average wait times and travel times themselves, as well as improvements to the consistency of those times.

Quantitative data: City of Toronto. In order to determine the impact of the King Street Transit Pilot on transit riders**,** the City of Toronto collected data throughout the pilot project on five metrics relating to transit. These metrics are: (1) wait time reliability, (2) full route travel time, (3) streetcar travel time range, (4) average streetcar travel time and (5) ridership.

Wait time reliability. This metric tracks the percentage of streetcars that arrive within four minutes of the previous streetcar. The data reveals that during the pilot project there was a modest improvement in the percentage of streetcars arriving within four minutes of each other (City of Toronto, 2017a, 2018a, 2018b, 2018c, 2018d, 2018e, 2018f). During the peak periods, on average, there was an improvement of approximately five percent in comparison to the baseline (see Figure 4.1.1). While Figure 4.1.2 displays data specific to May and June of 2018, the changes in wait time reliability during these months are representative of the broader changes that occurred during the first eight months of the pilot project. This similarity can be seen when comparing the graphs shown in Figure 4.1.1 and Figure 4.1.2.

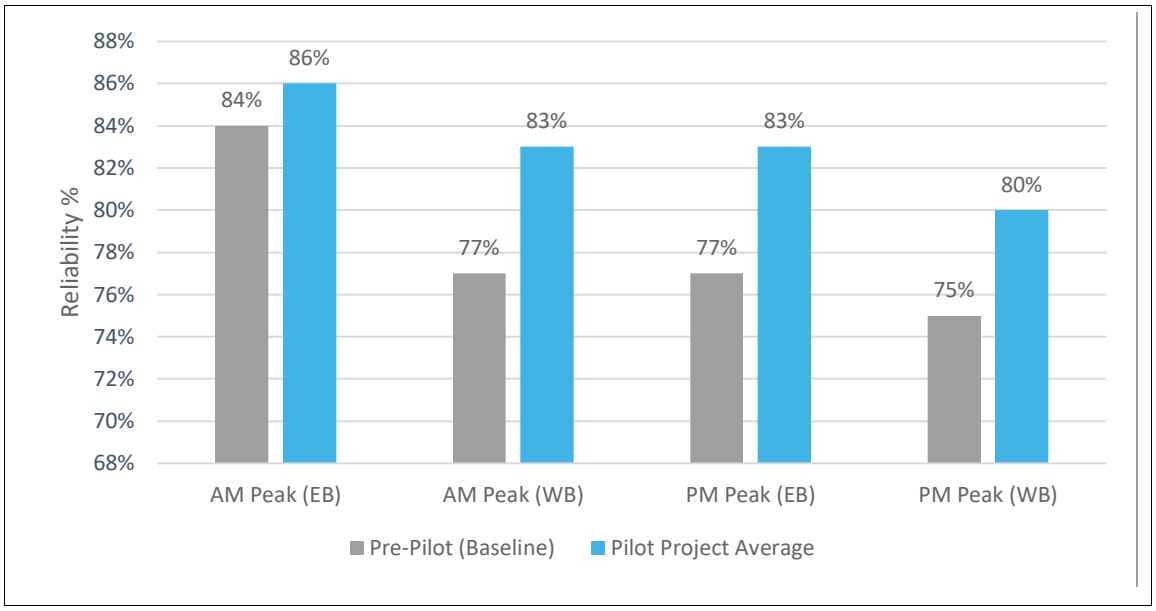

Figure 4.1.1. Percentage of streetcars arriving within four minutes (Baseline vs. pilot project average). Adapted from *King Street Transit Pilot Updates (November 2017 - June 2018)*, by City of Toronto (2017a, 2018a, 2018b, 2018c, 2018d, 2018e, 2018f).

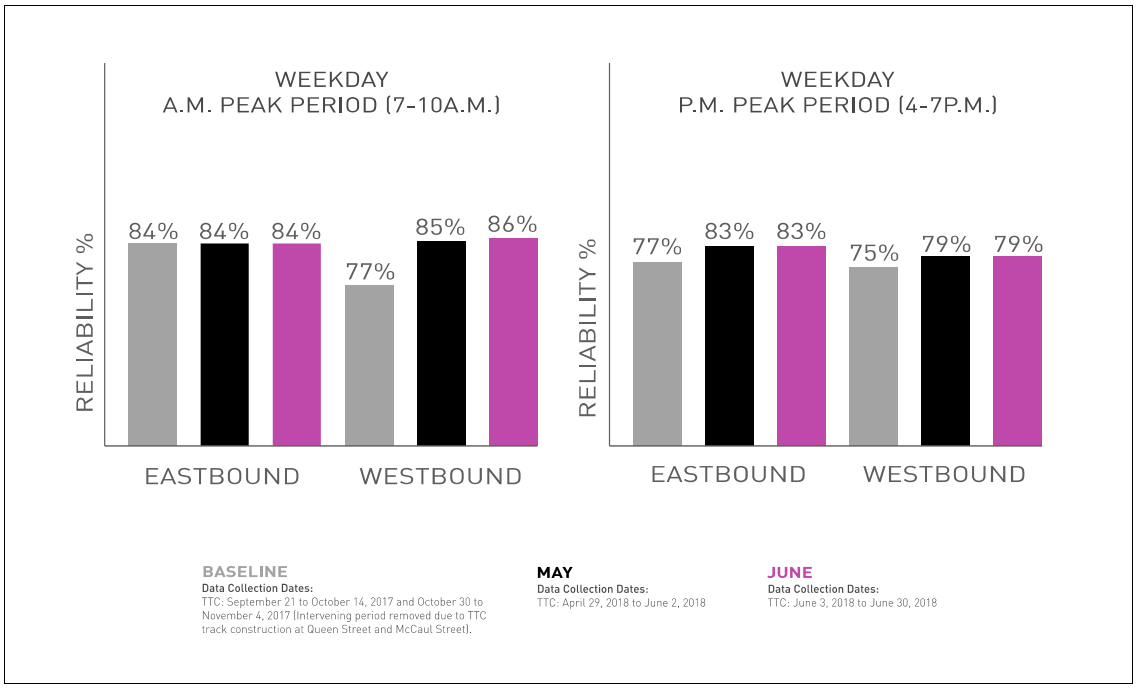

Figure 4.1.2. Streetcar wait time reliability in May and June 2018. Reprinted from *King Street Transit Pilot May and June 2018 Update*, by City of Toronto (2018f).

However, there has been less of an improvement in wait time reliability for eastbound travel during the morning commute (7AM–10AM) with the average improvement in reliability increasing by approximately two percent, compared to five to six percent during the other time periods. The likely explanation is that in this case, before the pilot project began, the wait time reliability was already above the levels the other metrics (eastbound AM peak and PM peak in both directions) increased to after the pilot was implemented. However, this data simply shows the percentage of streetcars to arrive within four minutes of the previous streetcar. That does not tell you whether it has enough room for you to get on. This is particularly important when discussing this specific streetcar line because it has been reported in interviews with numerous stakeholders (including City Councillors Joe Cressy and Mike Layton and representatives of multiple neighbourhood associations) that prior to the pilot project beginning, during peak periods, riders often had to wait for multiple streetcars to pass before there was one with enough room for them to get on (J. Cressy, personal communication, July 9, 2018; T. Hofley, personal communication, April 26, 2018; S. Kavanagh, April 25, 2018; & M. Layton, personal communication, May 28, 2018). In fact, many of the transit riders interviewed for this paper stated that the reduced wait times for a streetcar (that they can get on) and the improved consistency of the wait times, have led to the largest time savings. Unfortunately, at this time, there is not data available in order to verify these reported improvements.

Full route travel time. This metric tracks the time it takes to travel the full route for the King Street streetcars (Dundas West Station to Broadview Station). Figure 4.1.3 shows the full route travel times for the baseline (grey) and May 2018 (light blue) during the AM and PM peak periods. The changes in May 2018 are generally representative of the trends that have been seen

since the pilot project began. Even the most significant changes have been relatively minor (approximately three to five minutes in time savings reported during the PM peak period). During the morning rush the changes have generally been plus or minus one to two minutes from the baseline.

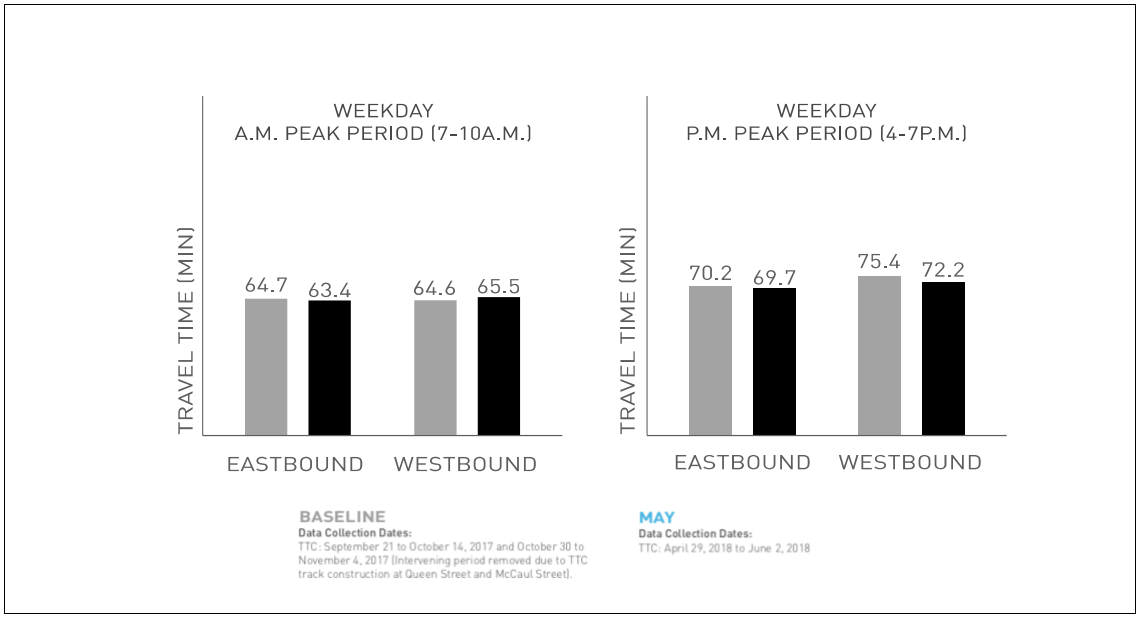

Figure 4.1.3. Weekday full route travel times in May 2018. Reprinted from *King Street Transit Pilot May and June Update*, by City of Toronto (2018f).

Streetcar travel time range. This measures the range in time that it takes to travel through the area where the pilot project was implemented (Jarvis Street to Bathurst Street) during the AM and PM peak periods. The travel time ranges being discussed in this section are based on 90% of trips. The reason for this is that the City of Toronto omitted the bottom and top five percent of trips in order to avoid skewing the data. As with other changes seen as a result of the pilot project, the impact has been more significant during the PM commute.

AM commute (7AM–10AM). The data shows that during the morning commute the changes in travel time were generally minor improvements. For eastbound travel, with the

exception of one month when there was a minor increase in travel time range (0.7 minutes), the changes have generally been decreases of less than one minute. For westbound travel, the changes in travel time range have been slightly more significant, with reductions averaging between one to two minutes.

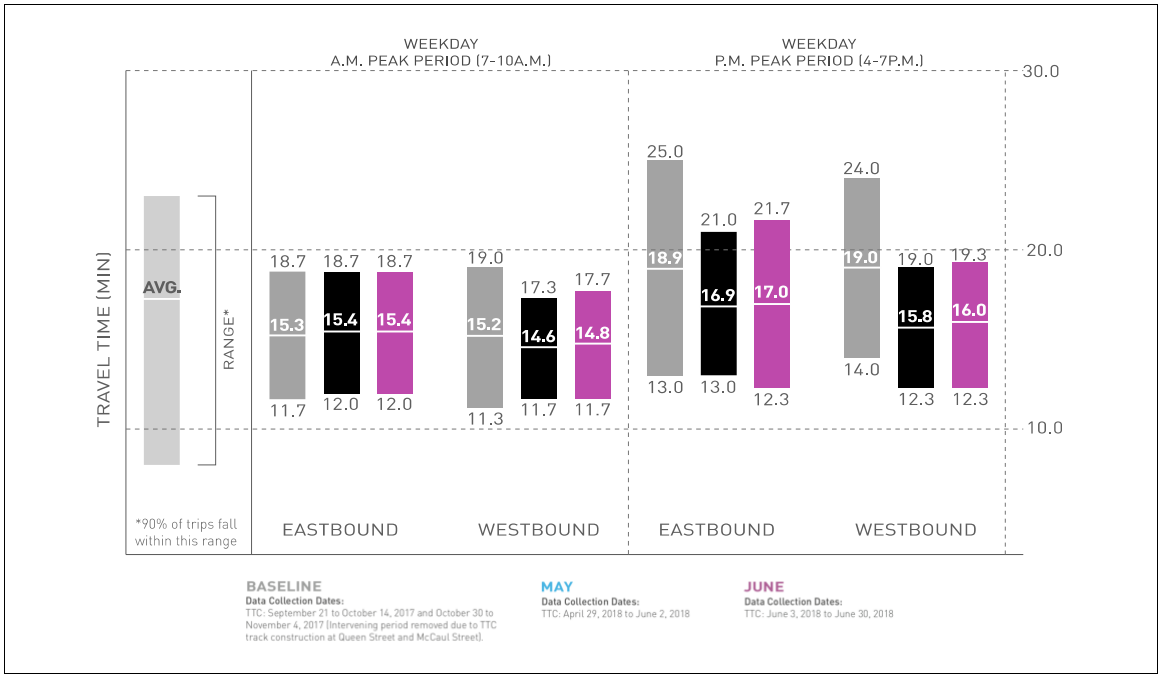

Figure 4.1.4. Streetcar travel time range in May and June 2018. Reprinted from *King Street Transit Pilot May and June 2018 Update*, by City of Toronto (2018f).

PM commute (4PM–7PM). The most significant changes have been during the PM commute. During this time, there have consistently been decreases in the travel time range by approximately four to five minutes. Figure 4.1.4 shows the streetcar travel time ranges for May and June 2018. While there are variations from month to month the data from May and June 2018 is largely representative of the overall trends discussed above (City of Toronto, 2017a, 2018a, 2018b, 2018c, 2018d, 2018e, 2018f).

Average streetcar travel time. Throughout the pilot project the City of Toronto tracked the average time it takes to travel the 2.6 KM stretch of King Street where the pilot project was implemented. The data in Table 1 displays those findings across five time periods for the months of May and June 2018. While there are variations from month to month, the changes in average travel time for May and June 2018 are largely representative of the trends seen since the pilot was implemented. The variations from the baseline shown in Table 1 have been colour coded to clearly demarcate whether there has been an increase (red) or decrease (green) in travel time. It is clear that with the exception of two very minor increases of 0.1 minutes, the changes in travel time have consistently been decreases.

Table 1

Average Streetcar Travel Time (May and June 2018)

	AM Peak (7-10am)	**Midday (10am-4pm)**	**PM Peak (4-7pm)**	**Early Evening (7-10pm)**	**Late Evening (10pm-3am)**
Eastbound					
Baseline	15.3	16.8	18.9	15.8	15.1
May	15.4	14.9	16.9	13.7	13.0
May Change	(+0.1)	(-1.9)	(-2.0)	(-2.1)	(-2.1)
June	15.4	14.9	17.0	13.6	13.5
June Change	(+0.1)	(-1.9)	(-1.9)	(-2.2)	(-1.6)
Westbound					
Baseline	15.2	16.1	19.0	16.4	14.6
May	14.6	14.2	15.8	13.7	12.8
May Change	(-0.6)	(-1.9)	(-3.2)	(-2.7)	(-1.8)
June	14.8	14.4	16.0	13.6	13.2
June Change	(-0.4)	(-1.7)	(-3.0)	(-2.8)	(-1.4)

Adapted from King Street Transit Pilot May and June 2018 Update, *by City of Toronto (2018f).*

With the exception of the AM peak period (7AM–10AM) when changes have been averaging plus or minus one minute from the baseline, the changes across the other four time periods have generally resulted in a consistent improvement of approximately 2 - 2.5 minutes. For example, the change in average travel time for the late evening period (10PM–3AM) has been reduced by 2.1 minutes. Despite that generally consistent decrease in travel time, reductions have been slightly more significant – averaging approximately 2.5 - 3 minutes – during the PM peak and early evening periods for westbound travel (City of Toronto, 2018a, 2018b, 2018c, 2018d, 2018e, 2018f).

Ridership. Throughout the pilot project the City of Toronto conducted ridership counts on a quarterly basis. For the time period being assessed for this research, counts were conducted in November 2017, March 2018 and June 2018. The findings reveal that there has been a very substantial increase in ridership, ranging from increases of between 8,000 and 12,000 people per day (see Table 2). These increases in ridership range based on the time of year the ridership counts were taken, with the lower increases occurring during warmer weather. The City of Toronto (2018f) stated that transit ridership going down in the warmer months is a consistent trend across the City of Toronto as more people opt for active transportation options.

Table 2

Change in weekday ridership (November 2017, March 2018 and June 2018)

Time Period	% Change in Ridership (from Baseline)	Change in Ridership (from Baseline)	Total Daily Ridership (Weekday)
November 2017	+ 16%	+ 12,000	84,000
March 2018*	+ 13%	+ 9,000	81,000
June 2018	+ 11%	+ 8,000	80,000

Note: Ridership counts for March 2018 were conducted in March of 2018 with the exception of one day, April 20, 2018. Adapted from *The King Street Pilot Updates (January 2018, April 2018, and May & June 2018),* by City of Toronto (2018b, 2018e, 2018f).

The data shows that compared to the baseline ridership average of 72,000 riders per day, on average, daily ridership increased by 12,000 and 9,000 riders in November 2017 and March 2018 respectively (City of Toronto 2018b, 2018e). The ridership counts conducted during these two time periods reveal that the most significant ridership increases during those months were during the PM peak period (4PM–7PM). During these time periods ridership increased by as much as 39% (City of Toronto, 2018b, 2018e). In June 2018, the changes in ridership were more consistent throughout the day and ranged from increases in ridership of between 8–18% (City of Toronto, 2018f).

The ridership data reveals that there has been a very significant increase in ridership after the King Street Transit Pilot was implemented. It is likely that a combination of all the changes made through the pilot project, and the corresponding positive impacts on the various metrics noted above, is a major reason for this.

Quantitative Data: TTC. While there are noticeable changes shown in the monthly updates released by the City of Toronto, it is important to note that these changes in travel time and reliability are based on comparisons to a baseline collected over a period of roughly six weeks in the fall of 2017, with two of those weeks being omitted due to construction work in the area. The City of Toronto has noted in all of the monthly updates that the baseline data was collected between September 21–October 14, 2017, and October 30–November 4, 2017 with the intervening period being omitted due to TTC track construction at Queen Street and McCaul Street (City of Toronto, 2018a, 2018b, 2018c, 2018d, 2018e, 2018f).

Transit advocate Steve Munro discusses the length and timing of the baseline used by the city in his article, "The King Street Pilot: Sorting Fact from Fiction" (Munro, 2018b). Munro's intention is not to discredit the data being provided by the City of Toronto, rather, to highlight the fact that the changes being reported by the City may actually be in some cases underreporting the magnitude of the improvements for riders. Riders are not assessing the pilot project on how it has changed their commute in reference to any specific baseline period selected by the City of Toronto. Rather, they are comparing how it has changed their commute overall through all the disruptions that happen over the course of a year such as inclement weather and closures due to construction and various special events.

To determine whether there was a more significant impact, Munro (2018a) analyzed data provided by the TTC going back years before the pilot project began in order to compare that larger dataset to the data collected during the pilot project. Just like the City of Toronto, Munro received the raw data directly from the TTC. The difference is simply the longer time period prior to the pilot project beginning being used as the baseline.

The analysis conducted by Munro using the larger baseline period reveals that at certain times of the day the impact is even more pronounced than shown by the City of Toronto in the monthly updates. The reason for this discrepancy is simple. The time period selected by the City of Toronto for the baseline (September 21–October 14, 2017; and October 30–November 4, 2017) is a time of year when there are not likely to be significant disruptions due to inclement weather and/or special events such as the Toronto International Film Festival. In addition to the timing, the City omitted a two-week period (October 15–29, 2017) when there was construction going on in the area. A City of Toronto staff member who was extensively involved in the planning and implementation of the King Street Transit Pilot, David Kuperman, noted this was done to avoid critics of the project attempting to discredit any improvements that were made and accusing the City of making unfair comparisons (D. Kuperman, personal communication, May 31, 2018). However, that very specific period, which is being used to compare the pilot project to, is not reflective of the wide variation in commute times that riders experience throughout the year. When the changes in travel time as a result of the pilot project are compared with a larger baseline (see Figure 4.1.5) it becomes clear why transit riders have consistently reported improvements in their commute that are more significant than would be expected by looking at the data released monthly by the City of Toronto. The graph in Figure 4.1.5 shows much less variation in the travel times after the pilot project was implemented and thus increased reliability of travel times. While the graph in Figure 4.1.5 shows westbound travel times during the evening peak period (4PM–7PM), the trends are largely similar for the same time period for eastbound travel.

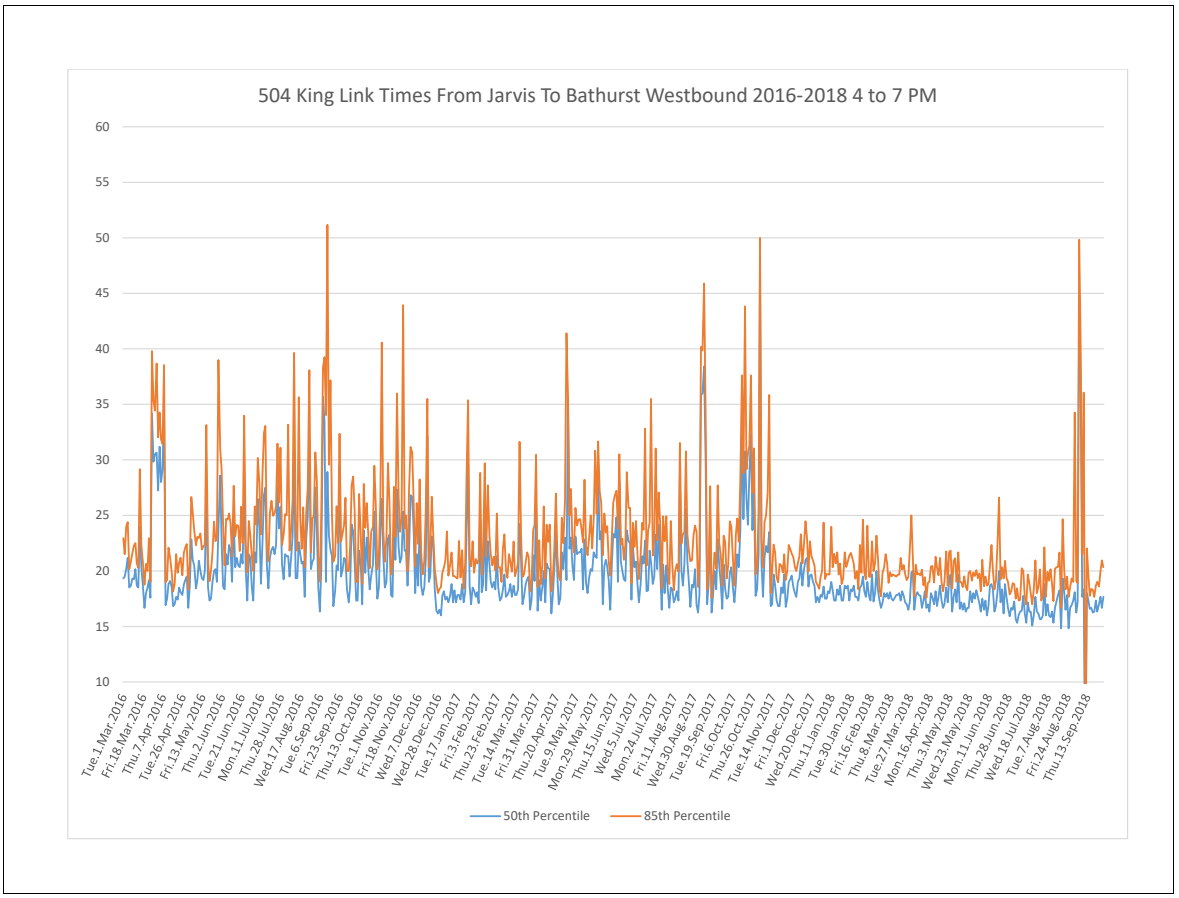

Figure 4.1.5. Westbound travel times from Bathurst Street to Jarvis Street, between 4PM and 7PM. Used with permission from Steve Munro.

Munro noted that the large spike in the travel time shown at the right end of the graph (see Figure 4.1.5) is a result of streetcars being diverted to Queen Street due to the closure of King Street in mid-September for the Toronto International Film Festival (TIFF). This is not intended to be a direct comparison with the analysis done by the City of Toronto because Munro analyzed and presented the data differently than the City of Toronto has. The graphs provided by Munro show the 50th and 80th percentiles for travel time while the analysis conducted by the City of Toronto presented the average. The purpose of including this additional analysis (with the

much larger time period for the baseline) is to look at more of the data in order to gain a greater understanding of the impact the pilot project has had on transit riders.

Munro's analysis helps to explain why the reports from transit riders have been so positive, even more so than would be expected by looking at the changes shown in the monthly updates released by the City of Toronto. All of these changes have led to riders reporting significantly improved commutes, which are discussed in the following section.

Qualitative data: Findings from the interviews. Overall the findings from the interviews, which were conducted to assess the impact the King Street Transit Pilot has had on transit riders, has revealed a very positive response to the pilot project. For example, of the 18 transit riders who were interviewed for this research, 17 reported an improved experience after the pilot was implemented.

In addition, representatives from both of the neighbourhood associations and the one business improvement area (BIA) who were interviewed for this research stated that the people they represent who are transit riders have consistently reported improved commutes (T. Hofley, personal communication, April 26, 2018; D. Thompson, personal communication, May 28, 2018; S. Kavanagh, personal communication, April 25, 2018).

Moreover, this positive reaction was shared by both of the City Councillors who were interviewed. Councillor Joe Cressy noted that every transit rider in his ward that he has spoken to about the pilot project has reported an improved travel experience (J. Cressy, personal communication, July 9, 2018). Likewise, Councillor Mike Layton said that of the 60-70 residents he spoke to about the pilot project, all but one of those transit riders reported improvements and

that they felt the pilot project was improving their commute (M. Layton, personal communication, May 28, 2018).

A theme heard repeatedly in the interviews was that after the pilot project was implemented, commute times have decreased substantially. This was noted by both Councillor Joe Cressy and Councillor Mike Layton who said that they have consistently heard this from the residents they have spoken to about the pilot project (M. Layton, personal communication, May 28, 2018; J. Cressy, personal communication, July 9, 2018).

Numerous interviewees noted that they have experienced a decrease in travel time. Four of those people quantified the reported change in travel time and revealed significant improvements in travel times. Two individual transit riders and two were representatives of local organizations. The two individual transit riders and the Executive Director of the Liberty Village Business Improvement Area, Deborah Thompson, reported reductions in commute times of approximately 30 minutes (D. Thompson, personal communication, May 28, 2018). The fourth individual, Todd Hofley, who is the President of the Liberty Village Residents Association, said that based on both his personal experience and the experience of the numerous community members he has heard from, he estimates the travel time savings to be approximately 15 - 20 minutes (personal communication, April 26, 2018).

A second reoccurring theme from the interviews was that after the pilot project was implemented, commute times have become much more reliable. Interviewees consistently noted improvements to both wait time reliability and to travel time reliability (the time on the streetcar itself). For example, Hofley noted that prior to the pilot project, the wait time for a streetcar varied greatly, sometimes up to 20 minutes (personal communication, April 26, 2018). However,

Hofley stated that after the pilot was implemented, wait time for the streetcar is consistently four to five minutes (personal communication, April 26, 2018).

Improved reliability was also reported by Suzanne Kavanagh, a representative of the St Lawrence Neighbourhood Association. Kavanagh noted that the neighbourhood association has received very positive feedback on the project from local residents and cited improved reliability as one of the main reasons they have been hearing as to why that is (personal communication, April 25, 2018). In addition, Councillor Layton and Councillor Cressy both stated that reports of improved reliability is something they have consistently heard when speaking with residents about the pilot project (M. Layton, personal communication, May 28, 2018; J. Cressy, personal communication, July 9, 2018).

Finally, of the 18 transit riders who were interviewed, 12 of them reported improved reliability when asked if they have experienced a change in their commute after the pilot project was implemented.

In summary, the findings from both the quantitative and qualitative data decisively show that the initial impact of the King Street Transit Pilot has been positive for transit riders.

Section 4.2: Impact on Drivers.

In this subsection, the findings from my research, which are relevant in order to understand the initial impact the King Street Transit Pilot has had on drivers, are discussed. The major theme which emerged from both sets of data is that the King Street Transit Pilot has not had a major impact on travel times for drivers.

Quantitative data: City of Toronto. To assess the impact of the pilot project on drivers, the City of Toronto measured average car travel times both on King Street and the surrounding street network. An overview of those findings is discussed below.

Average car travel times. The City of Toronto has collected data on average car travel times in both the AM (7–10AM) and PM (4–7PM) peak periods on streets surrounding the pilot area (both east/west and north/south). The data indicates that from when the pilot project began in November of 2017 up until April 2018 the pilot generally did not impact travel times on the surrounding street network. During the first six months of the pilot project, travel times on most streets in the surrounding area varied (+/-) less than a minute compared to before the pilot project began. However, in May and June 2018, the car travel times were much less consistent with the travel times recorded before the pilot project began.

Figure 4.2.1 compares the baseline travel times on surrounding east-west streets to the corresponding average car travel times recorded during March of 2018. The top bar graph (grey) displays the baseline while the bar graph below that (blue) shows the average travel time for March 2018. The change in travel time (compared to the baseline) is shown to the right of each bar graph. Decreases in travel times are marked in green while increases in travel times are marked in red.

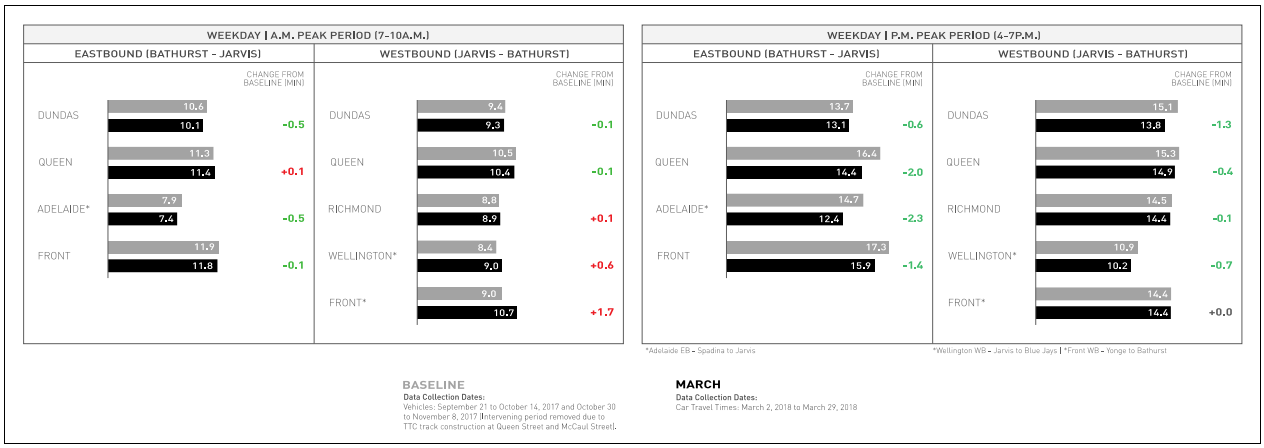

Figure 4.2.1. Average car travel times on East–West streets. Reprinted from *King Street Transit Pilot March 2018 Update,* by City of Toronto (2018d).

It is notable that during this time period (March 2018), on the surrounding east-west streets, in 13/18 cases (72%), travel times varied by no more than one minute (+/-) with the baseline travel times. Of the five times when the average change varied by more than one minute, four out of those five times were reductions in travel time. This means that 94% of the time (17/18 cases) travel times were either within one minute of the baseline or were reduced by more than one minute (City of Toronto, 2018d).

Figure 4.2.2 shows car travel times on north-south streets in the surrounding area for March 2018. The trends seen on north-south streets are largely similar to those seen on east-west streets. Along the north-south streets, in 18/20 cases (90%), the variations in travel time were within one minute (+/-) of the baseline numbers (see Figure 4.2.2). In both cases where there were variations of more than one minute from the baseline, they were decreases (improvements) in travel time. As a result, in March of 2018 all of the changes in vehicle travel times were either within one minute of the baseline or reductions (improvements) in travel time greater than one

minute. Like in Figure 4.1.1, in Figure 4.1.2 decreases in travel time are marked in green while increases in travel times are marked in red.

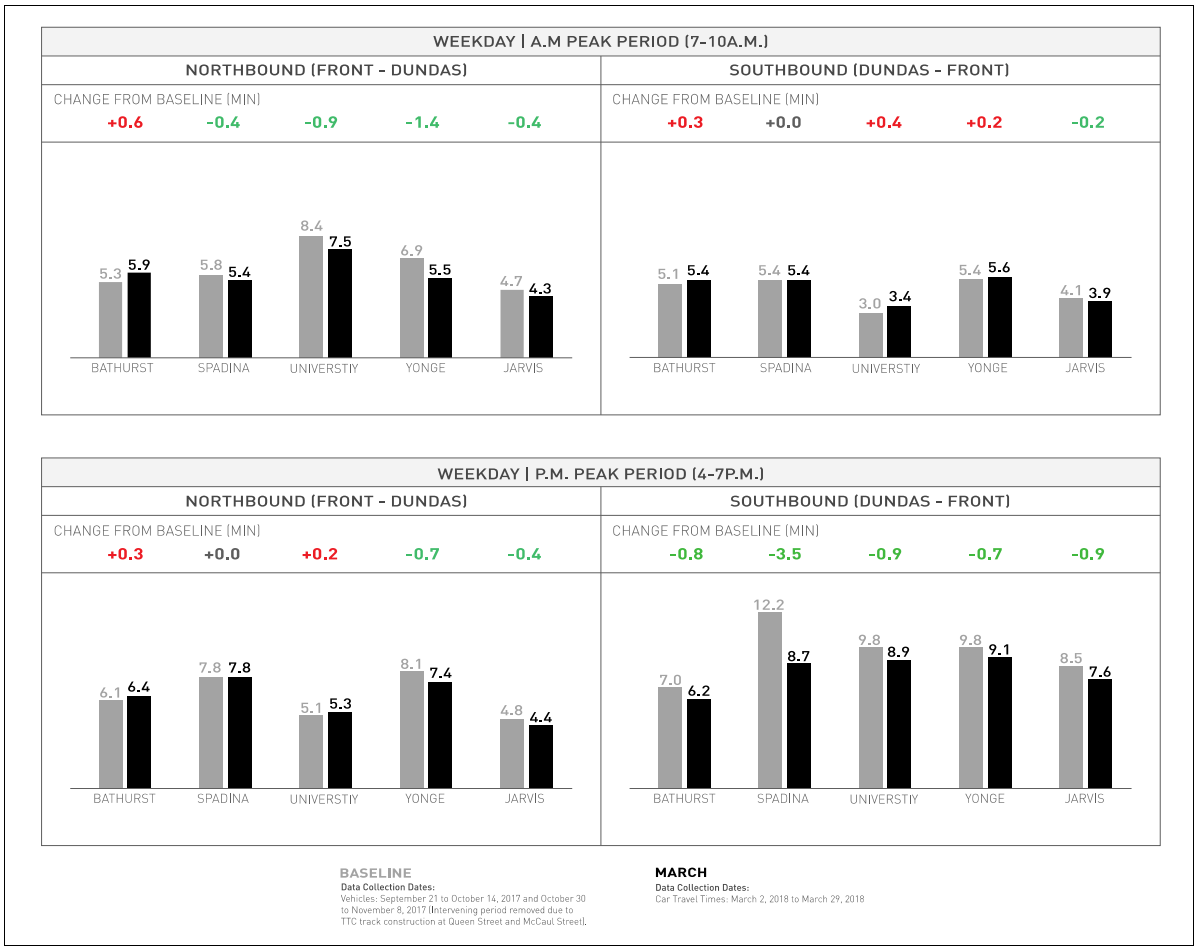

Figure 4.2.2. Average car travel times on North–South streets. Reprinted from *King Street Transit Pilot March 2018 Update,* by City of Toronto (2018d).

The averages shown in Figure 4.2.1 and Figure 4.2.2 are specific to March of 2018, but are largely representative of the trends seen from November 2017 to April 2018. However, in both May and June of 2018, car travel times were much less consistent with the travel times recorded before the pilot began (City of Toronto, 2017a, 2018a, 2018b, 2018c, 2018d, 2018e, 2018f).

The data in Table 3 displays the average variation (from the baseline) in automobile travel time for the surrounding street network by month. In Figure 4.1.1 (east-west streets) there are 18 data points and in Figure 4.2.2 (north-south streets) there are 20 data points. For each month, all 38 data points have been analyzed in two separate ways to better understand the impact on travel times.

Table 3

Automobile Travel Time Variation by Month

Month	Travel time variation +/- 1 minute of the baseline (%)	Travel time variation +/- 1 minute variation of the baseline and improvements of >1 minute (%)
November 2017	84%	84%
December 2018	74%	89%
January 2018	74%	97%
February 2018	92%	97%
March 2018	82%	97%
April 2018	79%	97%
May 2018	60%	63%
June 2018	68%	71%

Adapted from *King Street Transit Pilot Updates (November 2017 – May & June 2018)*, by City of Toronto (2017a, 2018a, 2018b, 2018c, 2018d, 2018e, 2018f).

The first column provides the percentage of data points which have variations that are within one minute (+/-) of the baseline. This provides an indication of the how often there has been a very minor change (within one minute of the baseline). The second column shows the percentage

of data points which are either within one minute of the baseline or showing improvements in travel time greater than one minute.

The data in the second column indicates that during the first two months of the pilot project being implemented (November and December 2017), a significant percentage of the data points (84% and 89% respectively) were either within one minute of the baseline or were reduced by greater than one minute. The data also revealed that in four of the eight months, 97% of the data points were within one minute (+/-) or showed improvements of greater than one minute when compared with the baseline travel times recorded prior to the pilot being implemented. The data indicates that during the first six months of the pilot project being in place, in a high percentage of cases, changes in travel times on the surrounding street network were either very minor or were reductions in travel time greater than one minute. However, this trend did not continue into May and June of 2018. During May and June 2018, only 63% and 71% respectively resulted in variations in travel time that were within one minute or reduced by greater than one minute. As was noted previously in this section, the City of Toronto has identified the beginning of "construction season" as a potential explanation for this (City of Toronto, 2018f).

Qualitative data: Findings from the interviews. To build on the quantitative data collected by the City of Toronto and to better understand the impact of the pilot project on this stakeholder group, numerous interviews were conducted with people who drive in the area. The theme that was most prevalent in the interviews with drivers was the acknowledgment that the new driving restrictions implemented along King Street did not have a significant impact on car travel times in the area. This finding supports the analysis of vehicle travel times in the area which was conducted by the City of Toronto.

While the official position of the Liberty Village Business Improvement Area is that they support the pilot project, a representative from the BIA did note that while their members who drive have not reported a significant change, some have indicated that their drive is slightly longer because of a less direct route (D. Thompson, personal communication, May 28, 2018).

An additional theme which emerged is a concern about the clarity of the signage which was installed to communicate the new driving restrictions. It was reported numerous times that the signs posted to inform drivers of the new driving restrictions did not make those new restrictions clear. This was reported by many people including Kevin Vuong (founder of King Street Eats initiative and candidate for City Councillor in the area), Steve Munro (local transit advocate), Ryan Fisher (co-owner, SPiN Toronto) as well numerous drivers. (R. Fisher, personal communication, April 23, 2018; S. Munro, personal communication, October 30, 2018; K. Vuong, personal communication, June 14,2018). Many of these individuals suggested that the signs should be made more clear. Since the changes made through the pilot project have become permanent numerous changes are planned to support the transition including plans to improve the clarity of the signage (City of Toronto, 2019). Related to the new restrictions that were implemented, one individual who said he drives, walks and takes transit in the area commented that he felt the decision to have tickets be given out after only two weeks was not the best approach to "set the right tone" about the pilot project. It is worth noting that he is one of the previously mentioned individuals who said the driving restrictions have not had a noticeable impact on his commute and that he is very supportive of the pilot project.

Another driver, who commutes from Pickering, a suburban neighbourhood just east of Toronto, to a local theatre on King Street once or twice a month, also stated that the pilot project

has not had a noticeable impact on his commute. He said that even with the new driving restrictions he and his friends continue to drive down to a local theatre on King Street because they find the cost of carpooling to be much cheaper than using public transit. He said that using the GO train to get from Pickering to downtown Toronto for four people is significantly more - $61.12 (GO Transit, 2018) - compared to the cost of parking (which he stated was $10) and paying for gas, which they spilt amongst the four of them. He said the new driving restrictions do not outweigh the high cost of public transit and convenience of driving from door to door.

In addition, a fire fighter from Fire Station 332 (which covers a portion of the pilot project area) was interviewed to determine if the pilot project has had an impact on their response times. The reason for this was because a local business owner commented during an interview that congestion in the area has increased significantly as a result of the pilot project. That individual went on to say that the increased congestion in the area is putting people at risk because emergency services are now stuck in that traffic. While the fire fighter did acknowledge that gridlock downtown is often a concern for them and does impact their response times, he said that the pilot project has actually improved their response times because they can now travel much more quickly along King Street (I. Mohammad-Sharif, personal communication, June 28, 2018).

In summary, the findings from the interviews have revealed at most a very minimal change in travel times. A finding which is supported by the data collected by the City of Toronto.

Section 4.3: Impact on Pedestrians

Measuring the impact that the King Street Transit Pilot had on pedestrians is quite difficult, particularly using quantitative methods of analysis, due to the subjective nature of these

impacts. As a result, there is a lack of quantitative data measuring the impact on these stakeholders. This makes the qualitative data obtained as part of this research that much more important when trying to understand the impact the pilot project has had on pedestrians.

This section begins with a discussion of the relevant quantitative data published by the City of Toronto. This data provides the context for the findings from the interviews which were conducted with various stakeholders in order to understand the impact that the King Street Transit Pilot had on pedestrians.

Quantitative data: City of Toronto. The City of Toronto measured pedestrian and cycling volumes on both on King Street and surrounding major streets for the duration of the pilot project in order to determine if changes to pedestrian and cycling volumes on King Street are reflected on other streets in the area. The data shows that throughout the pilot project changes in pedestrian volumes on King Street have been consistent with changes in pedestrian volumes on Queen Street (City of Toronto, 2017a, 2018a, 2018b, 2018c, 2018d, 2018e, 2018f).

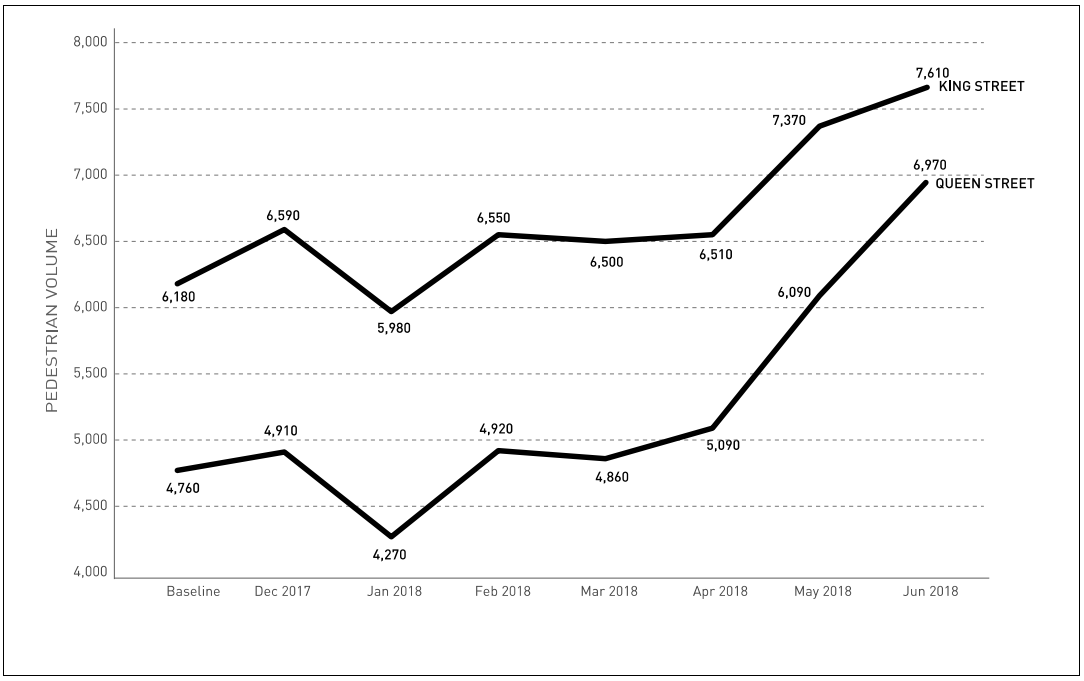

Figure 4.3.1. Total pedestrian volumes at King/Queen and Spadina (4PM – 7PM). Reprinted from *King Street Transit Pilot May and June 2018 Update*, by City of Toronto (2018f).

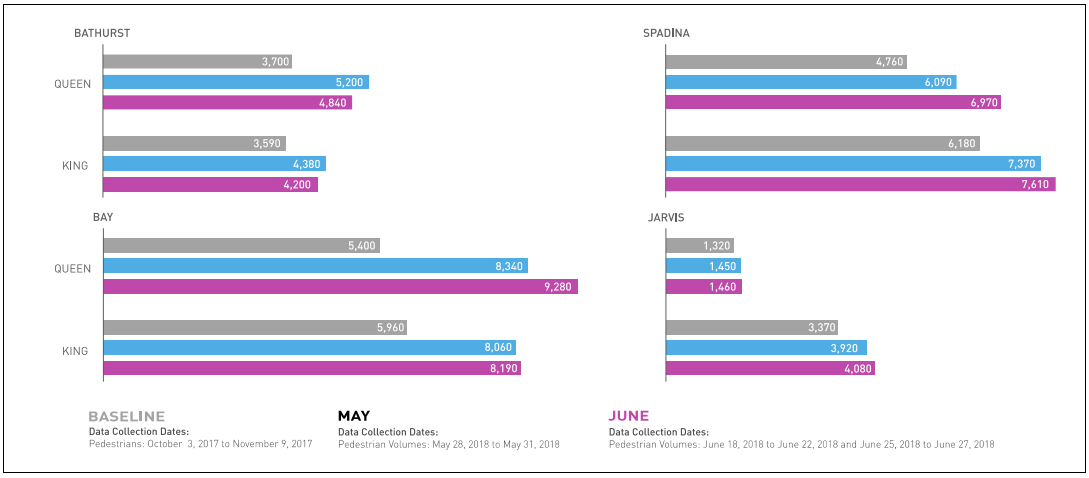

Figure 4.3.2. Total pedestrian volumes at major intersections on King Street (during PM peak period) in May and June 2018. Reprinted from *King Street Transit Pilot May and June 2018 Update*, by City of Toronto (2018f).

In terms of cycling volumes, the data collected by the City of Toronto shows that the changes on King Street have been similar to the trends seen on surrounding east-west streets and consistent with expected seasonal changes (City of Toronto, 2018f).

For the time period being analyzed (November 2017–June 2018), which is approximately the first half of the year long pilot project, this data would suggest that the King Street Transit Pilot has not had an impact on pedestrian or cycling volumes along this stretch of King Street.

As was noted in the previous section (see Section 4.2), the City of Toronto has also been measuring changes in car volumes on King Street. Data released by City of Toronto revealed that since the pilot project began in November 2017, there has consistently been a significant decline in vehicle traffic within the pilot project area. The decline in car volumes during the weekday PM peak period (4–7PM) in May and June 2018 (see Figure 4.3.3) is illustrative of the general trends that have been seen throughout the day since the pilot project began (City of Toronto, 2018f).

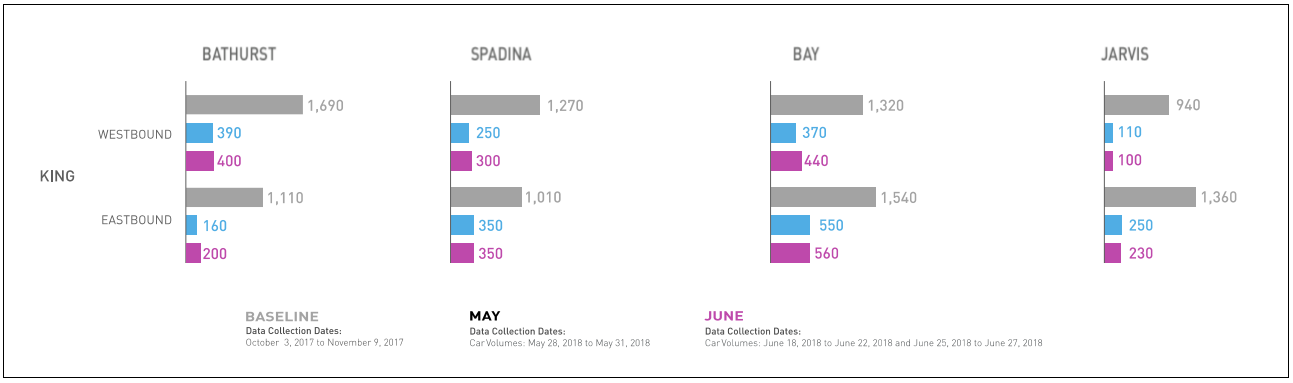

Figure 4.3.3. The total weekday PM periods (4PM–7PM) of car volumes in May and June 2018. Reprinted from *King Street Transit Pilot May & June Update*, by City of Toronto (2018f).

The relationship between a significant reduction in cars and the impact on pedestrians is quite subjective and is difficult to quantify, and potentially why an analysis of that impact has not been included in the monthly updates released by the City of Toronto. However, the impact these changes have had on pedestrians was brought up in numerous interviews. The impact of this is documented in the following section which discusses the findings from the interviews.

Qualitative data: Findings from the interviews. There were two strong themes that emerged from the interviews with stakeholders in response to the impact on pedestrians. The first is that the public realm elements have been a significant improvement and something that many people greatly appreciate and value, particularly because of the lack of parkland in the area. However, the second main theme was that many people felt the public realm elements of the pilot project could have been implemented better.

Todd Hofley (President, Liberty Village Residents Association) and Suzanne Kavanagh (Board Member and former President, St. Lawrence Neighbourhood Association), speaking on behalf of their respective organizations, said that for a variety of reasons the associations are very supportive of the pilot project (T. Hofley, personal communication, April 26, 2018; S. Kavanagh, personal communication, April 25, 2018). Both community leaders stated that the majority of the feedback they have received from residents in response to the pilot project has been positive and that a consistent theme has been that people have really enjoyed the changes to King Street, noting that it has made King Street more of a destination and a more pleasant street to walk along.

Hofley and Kavanagh said part of the reason for this are the various installations (Figure 4.3.4) that have been added to King Street, which they feel make King Street a more vibrant and energetic place to be (T. Hofley, personal communication, April 26, 2018; S. Kavanagh, personal communication, April 25, 2018).

Figure 4.3.4. Installation of bright coloured chairs along King Street. Photo by author.

Hofley and Kavanagh also attributed the more pleasant walking environment to the significant reduction in cars (see Figure 4.3.5) (T. Hofley, personal communication, April 26, 2018; S. Kavanagh, personal communication, April 25, 2018). This was something that was also noted by local residents Ryan Fisher (co-owner of SPiN) and Kevin Vuong (founder of King Street Eats) (R. Fisher, personal communication, April 23, 2018; K. Vuong, personal communication, June 14, 2018).

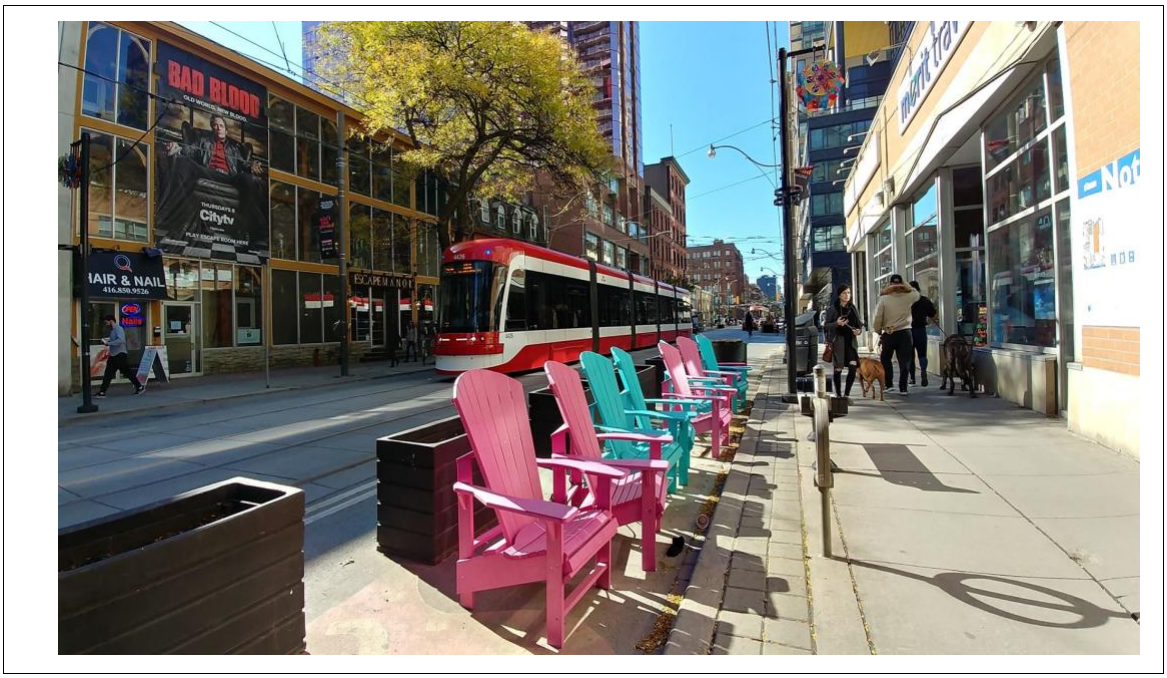

Figure 4.3.5. Enhanced pedestrian environment with more street furniture and less cars. Photo by author.

Another reason for the St. Lawrence Neighbourhood Association's strong support for the King Street Transit Pilot is because of the increased public space provided to the community. Kavanagh described the St. Lawrence neighbourhood as "parkland deficient" and said that the residents really appreciate the extra public space provided by the pilot project. Kavanagh also said that it is important to embrace additions to the public realm, particularly in communities like this one that are intensifying rapidly, so that the various services and amenities keep pace with the level of development and thus the increased demand (S. Kavanagh, personal communication, April 25, 2018).

Responses heard from people interviewed along King Street in regard to the impact of the public realm changes were largely positive as well. One of the people interviewed, a male in his late 20s who drives, takes transit and walks in the area said, "as a pedestrian, I love it!" A woman in her mid 20s, who was visiting from Hamilton, said that she had no idea the chair she was

sitting in had anything to do with a pilot project but that she really enjoyed having a nice, comfortable place to sit and read while she waited for her friend. Another tourist, a male in his late 50s, who was visiting Toronto from Vancouver, said he really enjoyed the seating along King Street.

Another person interviewed, a male in his early 60s, said that he came down to King Street that day to see the pilot project firsthand while his car was in the shop. He said he has heard a lot about it and thinks it is "fantastic" because "it lets you enjoy the city and the street more instead of just being overrun by cars."

Despite the strong praise from many people, the opinions on the installations designed to activate and improve the public realm varied and not everyone felt it was adding to the street in a positive way. John Carbone (co-owner of Kit Kat Bar and Grill) noted that he feels it is important to that King Street is "bright, vibrant, and energetic" (J. Carbone, personal communication, April 23, 2018). However, he felt the installations were poorly done, specifically mentioning the *Everyone is a Kid* installation (see Figure 4.3.6), and as a result felt that it would not attract people to King Street (J. Carbone, personal communication, April 23, 2018).

Figure 4.3.6. Public realm installation, *Everyone is a Kid*. Photo by author.

Al Rezoski, a Manager with the City of Toronto's City Planning Division with experience in the Division's Public Realm section, felt that changes to the public realm could have been stronger. Rezoski stated that he believes King Street is still missing a "unifying element, something to tie it all together" (A. Rezoski, personal communication, May 30, 2018). He did mention that the jersey barriers and the planters provide some continuity but stated it "wasn't strong enough to pull it all together." Rezoski stated that in his opinion many of the installations do not complement each other and often do not relate to what is abutting (such as a restaurant or shop). In terms of the installations themselves, he said some of them are "just too

meek, not strong enough... and don't have that wow factor," something which he said was potentially because of cautious BIA's (A. Rezoski, personal communication, May 30, 2018). He also said that time constraints likely contributed to the installations not being as good as they could have been. Rezoski mentioned parklets in New York City and San Francisco being better because they are more interesting and create a more pleasant atmosphere. Rezoski said that when he looks at the parklets in New York City and San Francisco, he thinks "wow, that's a great contribution." (personal communication, May 30, 2018). He said he learnt from his time working in the public realm section of the City of Toronto's City Planning Division the importance of good partnerships, for example, giving out free food and/or promoting different products. Rezoski also noted that the public realm enhancements through the pilot project provide much needed public space for the rapidly growing neighbourhoods along King Street; something, which he said, has not kept pace with development in the area over the last ten years. Rezoski did say he likes the bright coloured picnic tables and thinks the public realm would benefit from more installations like that one (see Figure 4.3.5) (A. Rezoski, personal communication, May 30, 2018). He also suggested something like they have in Montreal on Ste-Catherine Street with the bright coloured beads hanging over top of the road as something that could help "pull it all together". While that could not be replicated in exactly the same way on King Street because of the streetcar wires overhead, he also suggested painting the whole street a bright colour or installing banners or arches throughout the pilot project area to integrate it and make it more cohesive (A. Rezoski, personal communication, May 30, 2018).

Despite his strong praise for the pilot overall, Councillor Cressy said that if the City of Toronto decides to make it permanent and thus has less budget constraints, it will be important to

look at how to improve the public realm and really make it great (J. Cressy, personal communication, July 9, 2018).

Aside from how people viewed the installations themselves, there was broad consensus from the people interviewed that the timing of the implementation could have been better. This was stated by both of the City Councillors and nearly every representative of a community or business organization that was interviewed for this research. The message was that beginning the pilot project once it was already getting cold in mid-November and introducing the public realm elements months later in the spring was something that hurt the image of the project. Keesmaat said when it was implemented "created a window for a lot of the controversies and complaints from businesses and made it more controversial than it needed to be." (J. Kessmaat, personal communication, July 3, 2018). Councillor Cressy responded that one of the main reasons for doing a pilot project is to learn what works and what doesn't in a relatively inexpensive way. He acknowledged this was certainly one of the lessons learned from the pilot (J. Cressy, personal communication, July 9, 2018). Overall, the findings reveal that people see the changes as an improvement to the public realm, something which many people appreciate. However, another strong theme which emerged is that many people felt the public realm elements could have been stronger and better timed.

Section 4.4: Impact on Local Businesses

In this subsection, the findings based on the research that has been conducted into the impact of the King Street Transit Pilot, which specifically relate to the impact on local businesses, are discussed. This analysis is based on a combination of quantitative data provided

by the City of Toronto and qualitative data obtained through interviews with various stakeholders conducted specifically for this paper.

There are two important notes about the scope of this analysis:

1. The findings provided in this section are an initial assessment of the impact on local businesses and as such, the analysis is based on data that has been collected during approximately the first six months that the pilot was in place. As a result, the findings should not be extrapolated to be representative of the entire duration of the pilot project.
2. The purpose of this section is to provide an assessment of the initial impact on local businesses based on the quantitative (consumer spending) data provided by the City of Toronto, and the qualitative data obtained through interviews with various stakeholders. Together, these two data sources provide a broader and deeper understanding of the impact. It is important to note that it is outside of the scope of this research paper to conduct a comprehensive analysis of the full economic impact of the pilot project and the findings should not be interpreted as such.

This subsection has been organized based on the type of research conducted. It begins with an overview of the major findings and themes from the quantitative data that has been obtained from the City of Toronto which is followed by a discussion of the findings from the qualitative data, which has been obtained through interviews with various stakeholders.

Quantitative data: City of Toronto. The quantitative data used in this section are based on consumer spending data that the City of Toronto has obtained from Moneris Solutions Corporation in order to provide insight into changes in consumer spending during the pilot period. This data set includes consumer spending data from November 1, 2014 through to April 30, 2018. This timeframe is approximately three years before the pilot was implemented, and approximately the first six months after the pilot began. In addition to the data obtained for King Street pilot corridor consumer spending data for the surrounding area and the City of Toronto as a whole has been included for comparison. The City has defined the "surrounding area" as being bounded by Ossington Avenue and Strachan Avenue, College Street, Jarvis Street, and Lake Ontario.

While the City has obtained consumer spending data from the company with the largest market share in Canada for point of sale (POS) providers, it is important to be clear that these data do not include all transactions made through point of sale providers (City of Toronto, 2019). Businesses use a point of sale provider in order to process debit and credit card transaction and as a result this data source does not include purchases paid for with cash. However, Tony Elenis, President of the Ontario Restaurant Hotel Motel Association, stated that over 80% of transactions are made using debit or credit (T. Elenis, personal communication, April, 26, 2018).

The point of sale data obtained by the City of Toronto from Moneris Solutions Corporation shows that for the first six months of the Pilot (November 2017–April 2018) consumer spending along King Street has been largely consistent with the same time period the year before (November 2016–April 2017), with an average growth of 0.3%. During the six months period before the pilot began (May 2017 to October 2017), customer spending along

King Street was similar to the same time period the year before, although it declined by 0.3%. This shows that consumer spending followed similar trends both in the six months before and the six months after the pilot began compared with the year before. It is also important to note that there was an increase in consumer spending during the holiday season and a sharp decline in spending after that, something which this graph shows has been a consistent trend not only on King Street but in both the surrounding area and the city of Toronto (see Figure 4.4.3). A larger version of this graph has also been included (see Appendix E).

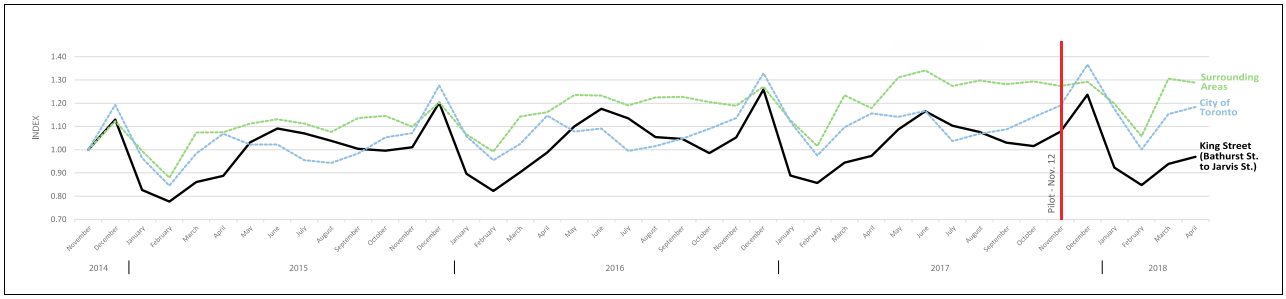

Figure 4.4.3. Changes in consumer spending on King Street, the surrounding area, and the City of Toronto. Reprinted from *King Street Transit Pilot May and June 2018 Update*, by City of Toronto (2018f).

Overall, along King Street, the surrounding area, and the City of Toronto as a whole, the trends in customer spending seen before the pilot project have largely continued in the first six months after the pilot project was implemented.

Qualitative data: Findings from the interviews. Three major themes emerged from the qualitative research that was conducted in order to assess the initial impact the pilot project had on local businesses.

The first theme that emerged was that the impact has not been consistent across the various sectors and geographic areas that the King Street Transit Pilot has impacted. The second theme is the need to look holistically at the impact the pilot project has had on local businesses,

rather than focusing on any one specific sector or geographic location. Finally, the third theme which emerged is a breakdown in communication between the City of Toronto and the local business owners themselves.

Theme one: inconsistent impact on local businesses. The interviews revealed that the impact of the pilot project on local businesses has varied greatly. For example, the Executive Director of the Liberty Village Business Improvement Area (BIA), Deborah Thompson, said the BIA has chosen to publicly support the pilot project in part because of the positive response they have heard from the over 800 businesses that they represent (personal communication, May 28, 2018). In addition, Todd Hofley, a local business owner in Liberty Village and the President of the Liberty Village Residents Association, noted that prior to the pilot project being implemented the commute to and from Liberty Village was an obstacle to recruiting strong employees. He said the improvements in travel time, which he estimates at 15-20 minutes each way, are already making it easier for him and other business owners to attract new talent (personal communication, April 26, 2018).

In contrast, John Carbone, a local business owner who has strongly opposed the pilot project, stated that his business has experienced very significant declines in revenue since the pilot project began. Carbone said that shortly after the pilot was implemented their revenue decreased by as much as 40-50% in comparison to the months before. He went on to say that sales improved after a popular musical, *Come from Away*, started playing at a nearby theatre, but stated that revenues have still decreased by approximately 30% compared to what they were prior to the pilot project being implemented (personal communication, April 23, 2018).

The response from Tony Elenis, who is the President of the Ontario Restaurant Hotel and Motel Association, and has been vocally opposed to the pilot project, is representative of this theme of the impact varying greatly. Elenis began the interview by saying that after the pilot project was implemented the businesses that they represent in the area – restaurants and hotels – experienced decreases in revenue of approximately 20%. However, when asked if he has an explanation as to why the data from Moneris is not reflective of that, he stated that some businesses have done better after the pilot project was implemented. He went on to say that in the Financial District, "it's packed, all the workers are still there eating lunch, there's vibrancy there, it is actually probably even better than before". He also said that the hotels and theatres in the area are doing better and explained that can mask the impact on smaller businesses (personal communication, April 26, 2018).

Finally, Ryan Fisher, one of the owners of SPiN Toronto, said that they have not seen a noticeable change in their revenue since the pilot project began (personal communication, April 23, 2018). It is clear that the impact of the King Street Transit Pilot on local businesses has varied greatly.

Theme two: importance of a holistic evaluation. The first theme, that the impact on businesses has varied greatly, shows why the second theme which emerged, the need to look at the impact of the pilot project in a holistic manner, is so important. This was emphasized by Councillor Cressy, Councillor Layton, and the President of Liberty Village Residents Association, Todd Hofley. All three stressed the economic importance of the entire King Street Corridor with the Financial District at its core in addition to the major employment zones at either end (Liberty Village, Corktown, the Don Lands). Councillor Cressy stated that this area is

an economic driver for Toronto, the larger region and even the country as a whole and said that if people are stuck in traffic going from one meeting to the next, that impacts productivity, and therefore that impacts businesses. Hofley cautioned against focusing on any one business or specific area, even if they are not doing as well. He said as a small business owner himself he knows how hard small business owners work to make a living and said he does not want to see anyone suffering. He went on to say though, if the pilot project is cancelled to help some businesses, it could hurt many more who are benefitting from it (personal communication, April 26, 2018).

Theme three: communication breakdown. The third and final theme which emerged was that there was a communication breakdown between individual business owners and the City of Toronto. In multiple interviews it was noted that business owners felt like their concerns were not being listened to by the City of Toronto. This was reported both by the President of the Ontario Restaurant Hotel and Motel Association, Tony Elenis, and a local business owner, John Carbone. (J. Carbone, personal communication, April 23, 2018; T. Elenis, personal communication, April 26, 2018). The reason for this communication breakdown was a result of poor communication between the local business improvement areas and businesses long before the pilot project started. This longstanding poor communication with the business improvement areas was noted by two business owners – John Carbone and Ryan Fisher – as well as Tony Elenis (T. Elenis, personal communication, April 26, 2018; R. Fisher, personal communication, April 23, 2018; J. Carbone, personal communication, April 23, 2018).

In summary, there were three main themes which emerged from the interviews. The first is that the impact on businesses has varied greatly. The second, which is related to this, is the

need to evaluate the impact this project has had in a holistic manner rather than focusing on any one business or area. Finally, it was noted in multiple interviews that businesses felt like they were not being listened to, which was in part was due to longstanding communication issues between the business improvement areas and individual businesses.

Section 5: Discussion of Findings

The purpose of this paper is to critically examine the impact of the King Street Transit Pilot project to determine if it should be made permanent. To do this, in the following section the impact on business owners, pedestrians, drivers and transit riders is discussed in depth and compared to the research identified in the review of literature. Upon analysis of the quantitative and qualitative research, it is evident that transit riders and pedestrians have benefited from this project, and that on average the impact on drivers and local businesses has been an insignificant.

Business Owners

A key finding of this research is that the impact the King Street Transit Pilot has had on businesses was both more nuanced and more positive than the media depicted it to be. The claim repeated in the mainstream media that the local businesses along King Street suffered greatly as a result of the King Street Transit Pilot was not supported by the findings of this research. Rather, the findings indicate that consumer spending has remained consistent with the seasonal trends seen during the three years prior to the implementation of the pilot. As noted in the findings section, the point of sale data released by the City of Toronto shows that consumer spending has continued to follow similar trends seen before the King Street Transit Pilot was implemented (City of Toronto, 2018f). In the first six months after the pilot was implemented, consumer spending increased an average of 0.3% compared to the same time period the year

before. That data also shows that in the six-month period prior to the Pilot being implemented, consumer spending decreased by 0.3% (City of Toronto, 2018f). This shows that on average, consumer spending within the King Street Transit Pilot area has not been significantly impacted by the Pilot.

The interviews were used to build on the quantitative data in order to more comprehensively understand the impact of the pilot. A significant finding that was revealed in the interview with the President of the Ontario Restaurant Hotel & Motel Association, Tony Elenis, was that the impact on businesses was not consistent across the pilot project area. Elenis identified that certain sectors (hotels and theatres) and a particular area - the Financial District - are doing very well and even better than before the pilot project was implemented. He said that is masking the negative impact on some of the smaller businesses. These are important findings which reveal a much more nuanced and varied impact than the media has often portrayed.

There are external factors which were noted by Kevin Vuong (personal communication, June 14, 2018). These factors may help to explain the reported decrease in revenue by some businesses, especially in the Entertainment District. Vuong noted that a potential factor, external to the Pilot, for why some businesses along King Street are reporting a decrease in revenue is likely tied to the fact that local theatres in the area were running on a reduced schedule. This was substantiated by research conducted by *The Globe and Mail* (Moore, 2018) which found that from when the King Street Transit Pilot began through to December 31, 2017, compared to the same time the year before, there were 38% fewer theatre performances. Vuong also identified another factor that could contribute to the decreased revenue, the abnormally cold weather. This unusually long and exceptionally cold weather was reported in various news stories (Gough,

2018; Levy-McLaughlin, 2018). Vuong said this was likely a factor that reduced the number of patrons to local businesses. In addition, the minimum wage increase of more than 20%, which was implemented by the Government of Ontario (2018) just weeks after the Pilot began, was identified by a local business owner, Ryan Fisher, as another potential external factor. Fisher acknowledged that this impacted his own profits and suggested it likely was contributing to the economic hardship some local businesses have reported.

Aside from the important impact the pilot has on local businesses, there is also a very significant economic importance of addressing congestion. Councillor Joe Cressy, Councillor Mike Layton, and the President of the Liberty Village Residents Association President, Todd Hofley, highlighted the economic importance of reducing congestion. All three emphasized the role of the King Street Transit Pilot in reducing congestion, something which has a significant impact on Toronto's economy. A report released by Metrolinx (2008b), *Costs of Road Congestion in the Greater Toronto and Hamilton Area*, found that in 2006 the annual cost of congestion in the GTHA was $6,000,000,000. This cost includes travel delays, increased vehicle costs, vehicle operating costs, increased environmental degradation and a general loss of productivity.

One of the findings was that businesses felt like their concerns were not being listened to, and that they felt like the City was telling them "to just get on board." This was reported both by Elenis who was speaking on behalf on multiple business owners as well as Carbone who was speaking on behalf of the business he co-owns on King Street. This was despite the fact that the City of Toronto conducted extensive consultation with stakeholders. The consultation included: a BIA focus group (1); a public lecture (1), stakeholder advisory group meetings (2), a stakeholder

advisor group drop in session (1), public meetings (2), and online surveys (2). There were 5165 responses to the first online survey and 2878 responses to the second online survey (City of Toronto, 2017c). There was a breakdown in communication despite this significant consultation. The important finding that emerged from several interviews with business owners and a representative of one of the business associations was that communication had not been strong before the pilot project began. This lack of communication between the individual businesses and the BIA's coupled with the fact that the City of Toronto relied heavily on the BIA's to act as a conduit of information between the City and the individual businesses, helps to explain the apparent contradiction between the level of consultation done and the claims of local businesses that they didn't feel like they were consulted with.

Pedestrians

One of the three stated objectives of the King Street Transit Pilot is to improve place-making (City of Toronto, 2019). While there were some interviewees that felt the public realm elements could have been stronger (Rezoski and Carbone), the pedestrians interviewed as part of this research all indicated that they either were enjoying the area and/or found it to be more pleasant than prior to the implementation of the Pilot. It was also noted by multiple people interviewed that part of the reason for this was because significant reduction in cars which made it a quieter and more peaceful place to walk. In addition to it being a nicer place to walk, the fact that it is a more walkable street encourages more people to walk rather than to use other modes of transportation. There are notable health benefits of walking which were summarized earlier in the Review of Literature section including the report released by the World Health Organization (2011) which identified the health benefits of cycling or walking briskly.

Drivers

A significant finding is that despite the various driving restrictions implemented as part of the Pilot, average car travel times have not significantly increased. In fact, during the first six months after implementation, depending on the month, in 84–97% of cases, the average automobile travel time was either within one minute of the baseline, or improved by greater than one minute. While interviewees both directly and indirectly reported, at least at first, an inconvenience of driving in the King Street Pilot area, however, there were also a surprising number who said that driving in the area was actually easier after the Pilot was implemented. One of those people was a fire fighter with Toronto Fire Services, Isam Mohammad-Sharif, who works at a station that serves the King Street Transit Pilot area. He indicated that responding to calls was actually significantly easier after the Pilot was implemented because they can travel unimpeded along King Street now when they are heading to a call (personal communication, June 28, 2018).

Transit Riders

In the following section the key findings of this research specific to the impact of the pilot project on transit riders are discussed. The quantitative data provided by the City of Toronto shows there has been increased reliability and a reduction in both average travel time and the travel time range for transit riders along King Street. Based on the interviews, the positive changes to metrics such as travel time reliability seems to have translated into a more positive experience for riders. The qualitative findings revealed consistently strong support from the people who were interviewed about the impact the pilot project has had on transit riders.

A key finding of this research, which was revealed through an interview with a local Toronto transit advocate, Steve Munro, is that there has been a much more significant improvement in travel times compared to the improvement shown in the data released by the City of Toronto. The reason for this difference is the much larger baseline time period used by Munro in comparison to the baseline time period used by the City of Toronto. Munro used a baseline of two and a half years of travel time data while the City of Toronto's baseline was less than two months. As a result of the much larger – and more representative - time frame used for his analysis, it revealed a much more significant improvement in travel times compared to the data released by the City of Toronto. This is an important finding because it provides a more accurate depiction of the improvement in travel times that has resulted from the pilot project and explains the disconnect between the City of Toronto's data and the qualitative findings obtained through the semi structured interviews that were conducted for this research.

David Kuperman, Manager of Surface Transit Projects with the City of Toronto (Kuperman, D., personal communication, May 31, 2018) identified that ridership levels on the nearest adjacent rapid transit line, Queen Street, did not see a change in ridership. As a result, he said that it is likely that the majority of the ridership increase seen on King Street are new transit riders. This seems to confirm results from a recent study from McGill University on the relationship between improved transit service and increased ridership. The authors found that the strongest association with a change in ridership was the amount of transit service deployed (Boisjoly et al., 2018). Their findings indicate that for every 10% increase in kilometers in the network there was an 8.3% increase in ridership. In addition to the significant increase in transit

ridership on King Street, it appears that the majority of those riders are new transit users, rather than existing riders shifting from other lines. This finding was revealed in the interview with

The findings from the semi-structured interviews with transit riders highlighted that this project has benefited people from various parts of the city, not just people who live or work within the Pilot area. During the interviews, numerous interviewees identified that they were satisfied with the pilot project because it made it easier for them to cross the downtown core.

Conclusion

The purpose of this research, which was identified in the introduction, has been to assess the initial impact of the King Street Transit Pilot on four stakeholder groups – transit riders, drivers, pedestrians, and business owners. At the outset of the paper, based on the review of literature that has been conducted, I put forward the following hypothesis: the measures proposed by the King Street Transit Pilot would largely have a net positive impact on the four stakeholder groups identified for this research. More specifically I anticipated that these changes will result in:

- a positive impact for transit riders, specifically improved speed and reliability of transit,
- a positive impact on pedestrians, specifically a belief that the public realm has improved,
- a positive impact on local businesses, specifically increased consumer spending and,
- an insignificant impact on drivers, specifically in terms of changes in travel times

The findings of this research support the hypothesis that the changes made by the King Street Transit Pilot would largely have a net positive impact for the four stakeholder groups. Moreover, the findings support each of these more specific elements of my hypothesis.

In terms of the impact on transit riders, I predicted that it would be positive, as a result of an improvement to both travel time and reliability. The data released by the City of Toronto showed clear increases in both of these metrics. In addition, the interviews and the additional data obtained through those interviews – including the analysis conducted by a local transit advocate – indicate an even more positive impact than shown in the data released by the City of Toronto. These findings of a positive impact to both travel time and reliability support my hypothesis and mirror the findings from the literature that has been reviewed in terms of the impact of projects to prioritize transit.

In terms of the initial impact on pedestrians, the hypothesis put forward was that there will be an improvement to the public realm as a result of these changes. While the data released by the City of Toronto does not measure this directly, they did report on changes in pedestrian volumes which the research has shown often go up after public realm improvements are implemented. The findings released by the City of Toronto revealed that over the time period being looked at for this research – the first eight months of implementation - changes in pedestrian volumes have remained consistent with seasonal trends seen prior to the pilot project being implemented. It is important to note that the public realm improvements had only been fully implemented at the end of the time period being looked at for this research, and thus a potential reason why pedestrian volumes did not increase. While the City of Toronto did not look

directly at changes in perception related to the public realm and improvements to it, interviews I conducted with various stakeholders – both individuals interviewed on King Street and representatives speaking on behalf of community associations – did address this directly. The pedestrians who were interviewed reported liking the changes and indicated that they feel it is an improvement compared to before the pilot project was implemented. While pedestrians noted an improvement, both a manager in the City's City Planning Division and a local business owner indicated that they feel the public realm could have been stronger. As was noted in the literature review, research has shown that there are specific elements which are often found in areas that are said to have a "high quality" public realm and that these areas often have higher pedestrian volumes than surrounding areas. These include a variety of street furniture elements and specifically comfortable places to sit, trees, shade and shelter, and landscape elements such as planters (Mehta, 2014). In part because a number of these elements have been installed on King Street, and findings of past research into the impact of projects in other cities designed to improve the public realm, I anticipate that over time pedestrian activity in the area will increase.

Based on the review of literature, the hypothesis put forward at the beginning of the paper was that the King Street Transit Pilot will not have a significant impact on drivers ,and more specifically it was predicted that there will not be a significant change in travel times on the surrounding streets. The findings of this research – both the quantitative data collected by the City of Toronto and the qualitative data collected through numerous interviews – validate this portion of the hypothesis.

Based on the findings discussed in the literature review around the economic impact of projects designed to improve public transit and/or the public realm, the hypothesis put forward at

the beginning of the paper in terms of the predicted impact of the King Street Transit Pilot on consumer spending was that there will be a positive impact on local businesses. The consumer spending data that the City of Toronto obtained from Moneris Solutions Corporation reveals that when compared with the six months prior to implementation (-0.3%), despite a very modest increase in the first six months after the pilot project was implemented (+0.3%), trends in consumer spending have largely remained the same. While technically these findings support this part of my hypothesis – that consumer spending will increase – based on the research into the economic impact of previous initiatives designed to improve public transit and the public realm, I predict that the businesses in this area will experience a much more significant increase in consumer spending in the years to come. In conclusion, these findings support the hypothesis of this paper: that the impact of the King Street Transit Pilot on transit riders, pedestrians, drivers and business owners will be positive.

As a result of these findings, the conclusion of this major paper is that there have been numerous positive benefits as a result of the King Street Transit Pilot, some of which, are even more significant than the City's findings indicate. Thus, the findings from this research support the City of Toronto's decision to make the changes introduced through the pilot project permanent. Moreover, this research provides sound justification for the further implementation of initiatives which prioritize sustainable modes of transportation.

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Appendices

Appendix A

Interview Questions for Structured Interviews

Questions asked to all participants (City staff, politicians, business owners):

1. Were there steps taken to build consensus between those in support of and against the project?
2. Were there steps taken to mitigate potential negative impacts on businesses due to the potential of reduced traffic from customers who commute by car?
3. Were businesses consulted (and how much) before the project started?
4. Did the City of Toronto work with businesses to develop a plan on how to be successful during the pilot and the changes that come with it?

Additional questions specifically for businesses owners:

1. What are your thoughts overall on the project? Both positive and negative?
2. Has there been a change in your revenue?
3. If so, are there factors other than the Pilot (weather, time of year, shows not running, lack of public realm/ street activations etc.) which might be contributing to that?
4. Are you running promotions to bring in customers? If so, do any of them target transit riders or pedestrians?
5. What recommendations do you have for City staff and local politicians going forward for how to improve the project?

Appendix B

List of Interviewees for Structured Interviews

Planning Professionals:

- Al Rezoski, Manager, City Planning Division (Community Planning Section), City of Toronto
- Jennifer Keesmaat, former Chief Planner & Executive Director, City Planning Division, City of Toronto (2012–2017)
- David Kuperman, Manager, Surface Transit Projects, Transportation Planning Division, City of Toronto
- David Hunter, Senior Transportation Planner, City Planning Division, City of Toronto
- Laurence Lui, Transit Planner, Strategy & Service Planning of Toronto Transit Commission

City of Toronto City Councillors:

- Councillor Joe Cressy, Ward 10 (formerly Ward 20)
- Councillor Mike Layton, Ward 11 (formerly Ward 19)

Neighbourhood Associations/ Community Activists:

- Kevin Vuong, founder of King Street Eats; City of Toronto City Council Candidate (Ward 20)
- Steve Munro, transit activist
- Suzanne Kavanagh, Board Member; former President (2008–2018) of St. Lawrence Neighbourhood Association; City of Toronto City Council Candidate (Ward 21)

- Todd Hofley, President of Liberty Village Residents Association; business owner in Liberty Village

Business Owners/Associations:

- Deborah Thompson, Executive Director of Liberty Village Business Improvement Association
- John Carbone, co-owner of Kit Kat Bar & Grill
- Ryan Fisher, co-owner of SPiN Toronto
- Tony Elenis, President of Ontario Restaurant Hotel & Motel Association

Emergency Services:

- Isam Mohammad-Sharif, Toronto Fire Services
- Sergeant (identity protected), Toronto Police Service

Appendix C

Interview Details (Structured Interviews)

Planning and Transportation Professionals:

Name	Title	Organization	Date	Location
Al Rezoski	Manager, Community Planning	City of Toronto – City Planning Division	May 30, 2018	North York Civic Centre
David Kuperman*	Manager, Surface Transit Projects	City of Toronto – Transportation Services	May 31, 2018	Toronto City Hall
David Hunter*	Senior Transportation Planner	City of Toronto – City Planning Division	May 31, 2018	Toronto City Hall
Laurence Lui*	Transit Planner Strategy & Service Planning	Toronto Transit Commission (TTC)	May 31, 2018	Toronto City Hall
Jennifer Keesmaat	Chief Planner & Executive Director (2012 – 2017)	City of Toronto – City Planning Division	July 3, 2018	Telephone Interview

*Group Interview

City of Toronto City Councillors:

Name	Title	Organization	Date	Location
Mike Layton	City Councillor	City of Toronto	May 28, 2018	Telephone Interview
Joe Cressy	City Councillor	City of Toronto	July 9, 2018	Toronto City Hall

Neighbourhood Associations/Community Activists:

Name	Title	Organization	Date	Location
Suzanne Kavanagh	Former President (2008-2018); City of Toronto City Council Candidate (Ward 20)	St Lawrence Neighbourhood Association	April 25, 2018	St Lawrence Hall (157 King Street East)
Todd Hofley	President	Liberty Village Residents Association	April 26, 2018	Starbucks (85 Hanna Avenue)
Steve Munro	N/A	Community/ Transit Activist	October 30, 2018	Broadview Café (817 Broadview Avenue)
Kevin Vuong	Founder; City of Toronto City Council Candidate (Ward 20)	King Street Eats	June 14, 2018	Starbucks (370 King Street West)

Business Owners/Business Associations:

Name	Title	Organization	Date	Location
John Carbone	Owner	Kit Kat Bar & Grill	April 23, 2018	Kit Kat Bar & Grill
Ryan Fisher	Owner	SPiN Toronto	April 23, 2018	SPiN Toronto (461 King Street West)
Tony Elenis	President	Ontario Restaurant Hotel & Motel Association (ORHMA)	April 26, 2018	ORHMA Offices (2600 Skymark Avenue)
Deborah Thompson	Executive Director	Liberty Village Business Improvement Association	May 28, 2018	Telephone Interview

Other:

Name	Title	Organization	Date	Location
Identity Protected	Sergeant	Toronto Police Service	May 17, 2018	Telephone Interview
Isam Mohammad-Sharif	Fire Fighter	Toronto Fire Services	June 28, 2018	Telephone Interview

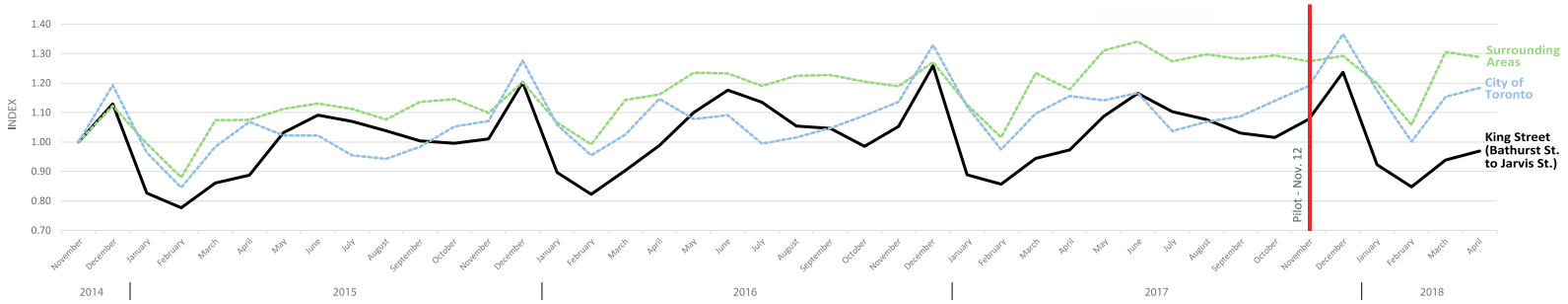
Appendix D

Sample Interview Questions used for Semi-Structured Interviews

Prior to asking specific questions about the research, the participant was provided with a brief explanation of the research being conducted and asked if they would be willing to answer a few short questions related to their experience with the King Street Transit Pilot. It was explained that participation in the interview was strictly voluntary and that they were free to stop participating at any time. If they agreed to participate in the interview, the following questions were asked:

1. Do you consent to this interview being audio recorded? [If so, this question was repeated so that the consent was included on the audio recording]
2. Has there been any change in your total commute time?
3. Has there been any change in the reliability/ consistency of your commute time?
4. How many times a week do you walk, drive, and/or take transit on King Street?
5. Did you drive, walk, and/or take transit along this stretch of King Street prior to the Pilot Project beginning on November 12, 2017? If so, did you take it as frequently as you do now?

Appendix E


INDEX
1.40
1.30
1.20
1.10
1.00
0.90
0.80
0.70
Surrounding Areas
City of Toronto
King Street (Bathurst St. to Jarvis St.)
Pilot - Nov. 12
2014
2015
2016
2017
2018